

Amateur Radio



October 1998

Volume 66 No 10

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- Icom IC-706MkII with DSP, reviewed by Ron VK3OM
- An LF Antenna Bridge, designed by Lloyd VK5BR
- The 41st Jamboree-on-the-Air (JOTA)

Plus lots of other articles, news and special interest columns

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Amateur Radio



Journal of the Wireless Institute of Australia

Amateur Radio is published by the Wireless Institute of Australia, ACN 004 920 745 as its Official Journal, on the last Friday of each month.

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122 Dover Street, Richmond, VIC 3121.

Mail Distribution

Mail Management Australia Pty Ltd

6 Garden Boulevard, Dingley VIC 3172

New Advertising

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PO Box 282, Toongabbie NSW 2146

Telephone: 1800 654 181 - 02 8831 1299

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Fax: 03 9523 8191

Business Hours: 9.30 am to 3 pm weekdays

Editorial and Hamads Deadlines

November issue 16/10/98

December issue 13/11/98

January 1999 issue 08/12/98

Receipt of Amateur Radio by Mail

The November issue will be delivered to Australia Post on Tuesday, 3 November 1998 for mailing to members.

If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with your local Post Office before contacting the registered office of the WIA.

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Vol 56 No 10

ISSN 0002-6859

October 1998

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Cover Will you be participating in the inaugural VHF/UHF Spring Contest? If so, your portable station may look like that of Max Pickering VK3TMP operating portable from the clifftop at Kilkunda on 30 December 1997.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from VK3BR Communications Pty Ltd on receipt of a stamped, self addressed envelope.

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

DISCLAIMER

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society Founded 1910

Representing the Australian Amateur Radio Service - Member of the International Amateur Radio Union

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Viewpoint

WIA Comment

Unreasonable Personal Attacks

I was talking on the telephone recently with another amateur who is also working for the WIA. We were discussing the need to get more people involved with helping to run the various committees and groups that do the work in the organisation. We were talking specifically about finding people with certain skills.

We discussed why we had both decided to come forward and then he made a comment that set me back on my heels. He said that he fully expected after a few years in his job to leave the position and be hated by a significant portion of the amateur population.

He wasn't expecting to do a terrible job. On the contrary, I'm sure he will do a good job for his fellow amateurs. No, what he meant was that in the time he serves with the WIA he will be subject to a degree of character assassination and unreasonable criticism which will be believed by some.

What an appalling thought!

What sort of organisation are the members allowing to develop where a good person with obvious personal skills and integrity can be forced to suffer such attacks in order to serve the organisation?

The members at large must ensure this stops.

There should, of course, be very vigorous debate on issues affecting amateur radio. We are in a position right now where there are significant threats to our existence and doubts, even within the hobby, of its value and potential futures. However, debate should be about the issues not the personalities. Just because I support one side of the Morse case does not turn me into the devil incarnate suitable for personal vilification.

I am reminded of one of the most famous quotes about democracy, "*It is necessary only for the good man to do nothing for evil to triumph*" (attributed to Edmund Burke but not found in his writings).

If someone is trying to advance their own position by denigrating their opponents or misrepresenting them, we should ask them to instead advance an alternative argument.

If someone purports to have inside information we should check it with an insider.

We should regard with suspicion those who try to build their own position only by denigrating others.

The easiest test of all is, does this argument, criticism or comment serve to improve the future of Amateur Radio for ALL amateurs? I emphasise ALL. In the world of Amateur Radio there is no room for parochialism. Amateur Radio is first governed by international treaties and then by national government laws. Those who keep their sights too low will miss the target and lose the whole game.

Of the 4500 members of the WIA the people that play the man rather than the ball amount to less than 50! However, many have reached positions of influence and power well above any positive contribution they have made to the organisation.

I plead with the members to ensure that there is vigorous debate on issues but in such a way that our best and most able people are encouraged to step forward and help Amateur Radio progress into the future. Without the help of many good people our organisation will die.

Martin Luther VK5GN

(Martin has been a licensed Radio Amateur for over thirty years and has held the calls GW3VBX, VK4VU and VK5GN. Active on all bands 160 to 70 cm and most modes, his special love is HF contesting. Martin is a Director of the WIA.)

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

From the President Peter Naish VK2BPN

We are nearing the centenary of amateur radio. Much has changed since the early days of the hobby in terms of the technology we use and the society in which we live. We now make use of technical inventions many of which were pioneered by amateurs. It is relatively easy for us to set up an amateur radio station that is capable of talking to any point in the world directly or by satellite. Communications by voice, digital modes and television are commonplace. Computers and semiconductor devices have revolutionised our rigs.

But, have we as radio amateurs really changed? Have we not become so complacent after all these years that we think we need do nothing to ensure that amateur radio will continue to exist and

that we will be allowed to use our privileges for ever?

Slowly but surely society is changing. More and more influence is being placed on the use of resources and care of the environment. We have seen the pressures placed on commercial operators such as mobile telephone service companies in regard to their cell-site towers. The effects of radiation and visual impact are a major concern and this concern is beginning to flow onto the humble radio amateur with his back yard antenna farm.

Equally worrying to the amateur operator is the interest being placed on the radio spectrum which we use. Commercial organisations, with their massive budgets and thirst for new territory in which to promote their high

technology communications products, are looking at parts of the spectrum which a few years ago were relatively unused.

All of our UHF and microwave bands are allocated to us on a secondary basis and we have no security of tenure. Spectrum auctions to commercial interests have already begun and these will continue with the possibility of significant reduction in our privileges.

We as radio amateurs have to be responsible citizens. That means we cannot ignore the pressures and expect to continue without change. The WIA as the voice of the Australian radio amateur is active in ensuring that the best possible outcome will be achieved. This will not be an easy task. The dedicated group of volunteers who act as directors, councillors, co-ordinators and specialist delegates need the total support of all those interested in amateur radio.

As President, I intend to keep you up to date via this magazine as to how we are progressing and to request from you from time to time your particular assistance to ensure an acceptable solution. We have to work as a team and put aside personal issues.

Together, we will succeed and take amateur radio into our second century and the new millennium.

*Peter Naish VK2BPN
WIA Federal President*

ar

Its Now On Line! Just Type In www.wia.org.au

If you're like most people, you find typing long URLs (Uniform Resource Locators) tiresome at the best of times.

It's so easy to make a mistake, especially if the URL is a long one, as many are.

Telling others about a new URL can be troublesome too, especially if you forget how to say "—" or whether "/" is a "forward-" or "back-slash". Then, if the pages are relocated for any reason, you have to go through the whole ordeal again.

For those browsing the WIA pages, help is now at hand, with the registration of the domain name, <http://www.wia.org.au>. Simply type that into your browser (you can usually omit the <http://> bit), and you get straight to the main WIA home page.

The new WIA home page has links to all the other WIA Division pages. You can even type www.wia.org.au/vk* (where "*" is your state number) to jump to the desired Division page. The WIA home page, which is being reorganised

at the time of writing, has a number of useful pages of information about operating in Australia, such as repeater and beacon lists, band plans, contest rules and results, some content from *Amateur Radio* magazine, and more.

There is also a new site index, which contains an alphabetical listing of the contents of the Federal pages (plus some links straight into the Division pages).

We hope you'll find the new WIA pages easier to find, and easier to use! If you have any suggestions for improving the pages, please e-mail your suggestions to the acting Federal Webmaster, Richard Murnane VK2SKY at richardm@zeta.org.au who set up the new structure with the invaluable assistance of Mark VK2XGK.

ar

ICOM Clearly Ahead



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To find out more about exciting new product releases like the IC-R2, plus lots of other interesting Icom information,

be sure to visit our website on

www.icom.net.au

EVENTS NOT TO BE MISSED

The events keep coming so be sure to note these in the diary. It's a great way to spend a warm spring Sunday.

Healesville VIC Hamfest - Sunday October 13

Perth WA Hamfest - Sunday October 8

"...73"

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ARRL Suggests Restructure of Ham Radio

The latest news from the ARRL centres on a proposal to restructure amateur radio in the United States to bring it into line with the requirements of the 21st Century.

Whether these requirements are perceived or proven, in an open letter from ARRL President Rod Stafford W6ROD it has been revealed that there is a growth rate of new hams coming into the service of less than 2 per cent. A rate that does not even keep up with the 'loss rate' of people who die or simply leave amateur radio for various reasons.

The letter also states that, "The Board of Directors is aware that merely restructuring licence classes and modernising the CW testing requirements is not the whole answer".

Mr Stafford also said that we have to change people's perception of ham radio

being a pursuit involving 70 year old communication techniques.

Debate has already been widely heard on the subject of the proposed restructure, which was discussed and voted on by the Board of the League. Lengthy discussion and debate during the Board's meeting earlier this year led to majority support for the plan.

The 'simplified Amateur Radio licensing structure' would accommodate four classes.

Under the new scheme there would be four written examination elements to establish amateurs' operational and technical qualifications, instead of the present five and two Morse code examination elements instead of the present three.

BT

A DXCC Location May Not Be an Island Unto Itself

I am grateful to Graham Kemp VK4BB who supplies me with QNews. A recent issue of QNews revealed how, for DXCC purposes, islands in a group can be identified.

John Aarsse VK4QA takes up the story.

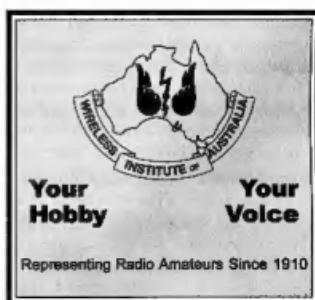
"You may remember some weeks ago I mentioned that the new DXCC rules incorporated entities and I tried to explain what they were, a hard job as the original articles, both in the US and Dutch press were fairly vague.

"Well, peace at last. In the July issue of QST there is an interesting overview by DX editor KSFUV.

"For instance, an island group can have a number of separate entities, provided that all those islands are separated from each other by at least 350 km of sea and an island is defined as an entity which must have a connected land mass between two points which must be at least 100 metres apart.

"The question now arises, can Tasmania be considered an entity? It certainly is longer than 100 metres between any two points, but is it more than 350 km from the Australian mainland?

If not, then we have to wait a few more centuries before mainland Australia has moved northwards at a rate of 6 cm per year".



WIA Call Book 99

It is with great pride that the Wireless Institute of Australia has produced yet another fine quality collection of information about the Australian amateur radio scene in a well produced single volume.

The WIA Call Book 99 makes an ideal complement to the radio enthusiast's shack and this year contains up-to-date information on callsigns, operating information and much other useful data. Contact your Division bookshop for a copy.

Recall of *Radio Theory Handbook for Amateur Operators, 3rd Edition*, by Fred Swainston

The electronic interface between the computer and the printer has caused some of the Greek symbols used in the publication to appear incorrectly.

DocuTrade, Tullamarine (the printer) and Silverdale Publications (the publisher) have arranged for all books to be corrected on their return to Silverdale Publications, 73 Silverdale Road, Eaglemont VIC 3084 or, in NSW, all books returned to Silverdale Publications via the WIA Office, 109 Wigram Street, Parramatta NSW 2124.

We apologise for any inconvenience that may have occurred as a result of this misprinting.

We express our thanks to Max and Wilma Morris VK3GMM and Mrs E Harding VK5ZLU for their early identification and reporting of the incorrect symbols.

NOTE: It will be necessary to include your name and mailing address inside the front cover of your book to ensure the speedy return of your book.

Lorraine Hunter, Silverdale Publications, 03 9499 8111, silverdale100@hotmail.com ar

Anti-CW groups on the Move

The proposed new structure from the ARRL does not suggest there is a move to eliminate Morse. In fact, the ARRL President, Rod Stafford W6ROD, says Morse code will stay.

But, as reported by the RSGB, a New Zealand based anti-CW lobby group has joined forces with a similar organisation in the United States, with the goal of ending mandatory Morse testing worldwide.

The New Zealand group, known as ORACLE, which stands for the Organisation Requesting Alternatives by Code-Less Examinations has teamed up with the US based No-Code International. ar

Back-off on 70 centimetres in the US

An official of the American Automobile Association (AAA), says the Land Mobile Communications Council (LMCC), is backing away from its request that the FCC reallocate 420 to 430 MHz and 440 to 450 MHz from the federal government to the Private Mobile Radio Service (PMRS).

An AAA spokesperson says he doubts

the FCC will ever agree to the request in the face of strong support for continued Amateur Radio presence on the band. Amateur Radio has a secondary allocation on the band. The AAA is an LMCC member.

It has been reported that strong support for ham radio from the Assoc-

iation of Public Safety Communications Officials-International (APCO) and the National Telecommunications and Information Administration caused the LMCC to back-off its demand to reallocate the 70 cm sub-bands it had requested.

[Via Amateur Radio Newsline] ar

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

420-450 MHz is wanted by Australian commercial interests
RF emission regulations threaten handhelds, mobile rigs, and suburban home stations, with bureaucratic limits

More of 7 MHz is wanted by global broadcasters

RENEW YOUR MEMBERSHIP RECRUIT NEW MEMBERS

WIA action has:

- Cut the cost of licence fees
- Cut fees on beacons and repeaters
- Improved licence conditions
- Retained access to 50 MHz and 576 MHz; and more!

The WIA maintains representation:

- At World Radio conferences
- To the ACA
- On the Radio Communications Consultative Committee

Strength in numbers - Subs help pay



Your Hobby

Your Voice

■ Test Equipment

An LF Antenna Bridge

Lloyd Butler VK5BR
18 Ottawa Avenue
Panorama SA 5041

Foreword

Most of us in VK5 will be well aware that the Coastal Radio Station VIA at McLaren Vale was made redundant a few years ago and purchased by Harro Krause VK5HK as his home QTH. It is a magnificent elevated site for amateur radio, well away from the built up areas and with a large aerial field of masts and transmission lines, the envy of all red-blooded radio amateurs.

As part of the installation, Harro has a beautiful vertical mast 45.72 metres high, insulated at the base and surrounded by 120 earth mat radials each 225 metres long. The original installation also had 90 metre top loading wires to four other surrounding towers. These wires have been removed but, with a bit of work, could be restored. To add to it all, there is a 75 ohm coaxial line and a 600 ohm open wire line already installed back to the radio building.

With or without the top loading, we have the ideal site for some LF transmission experiments and, if we can give him the necessary help, Harro is keen to make the site available for that purpose. Right from the earlier months of 1997, we have been looking at avenues to get an LF licence and how we might set up gear to transmit LF from the site. Initial thoughts were to use the mast as it stands (no top loading, at least for the present).

So that we could correctly couple and load the antenna at its base, we needed to know the values of the resistive and reactive component it presented. Some constants can be calculated but, in the real world, it's nice to be able to measure precisely what one has to work with.

Neither Harro nor myself had gear which could measure the constants required. Some 'farmyard' methods of

measurement were tried but results were not too convincing. Also, in making measurements on an antenna at this site, there is a problem of confusing readings caused by RF pick-up from high powered MF broadcast transmitters at nearby Pimpala. The problem of inadequate test gear led me to build the LF bridge which is the subject of this article.

Introduction

The bridge is based on the usual HF noise bridge circuit, which is actually a type of capacitance bridge arranged to measure both positive capacitive reactance and the reverse of this which is interpreted as inductive reactance.

However, it is different from the usual noise bridge in that the bridge components are selected specifically for the LF frequency range and the in-built signal source is a single frequency and not noise.

The single frequency is much more satisfactory to get a bridge balance. As a matter of fact, I often use a fixed frequency with my HF noise bridge for the same reason (*Reference 2*).

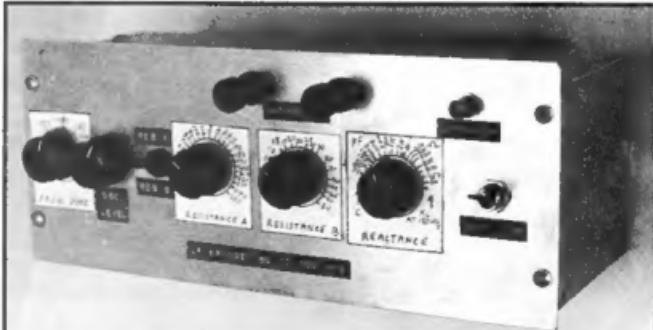
The unit was designed to operate within the range of 160 to 200 kHz, which covers frequencies used by several amateurs operating with Scientific Licences in Australia and the 160 to 190 kHz band allocated to New Zealand amateur stations. At the time of building the unit it was not known that the WIA might make application for an amateur band extending below 160 kHz to include the 135.7 to 137.8 kHz range now available to European amateurs under the CEPT agreement and later to be made available to UK amateurs.

An LF receiver is used as the null detector in conjunction with the LF bridge as is normally done at HF with the HF noise bridge. However, the output to the receiver is fed via a 160 to 200 kHz bandpass filter to protect against cross modulation at the receiver input from the broadcast stations mentioned previously and from VLF noise.

The unit can be used to measure the antenna resistance and reactance constants to assist in the design of the coupling system. It can also be used on the transmitter side of the coupling system so that the system can be checked and adjusted, as necessary, for the desired reflected load. This is done without putting any signal to air from the transmitter and, of course, this is how most people make use of the noise bridge at HF.

Circuit Description

The LF signal is generated by a 555 timer circuit N1 which is adjustable over the frequency range of 160 to 200 kHz. It is inclined to drift a bit when first turned on but it does the job. Its waveform is shaped



Front panel view of the LF Antenna Bridge.

by components L1 and C4, and drive level is set by RV1.

The bridge coupling transformer is fed via balanced driver LF353, N2. The bridge components are the 560 pF capacitor C9 in series with the unknown, 3 x 20 to 460 pF variable gang capacitor C10 with sections paralleled, and either of the potentiometers RV2 (250 ohms), or RV3 (50 ohms).

As with a lot of my projects, the unit was made from gear accumulated in my own junk box but I had some trouble finding suitable potentiometers with low enough inductance for use in RV1 and RV2. Carbon pots are really called for but, in low resistance values, they are a bit hard to find. I didn't have any and I couldn't find any in the catalogues of the local electronics shops.

At these low frequencies a small amount of inductance can be tolerated and several wire-wound pots were checked out for inductance. Most of those measured did not make the grade but I found two which just did the job. The 250 ohm Colver pot selected measured 7 μ H at 250 ohms and 1.4 μ H at 50 ohms. This corresponds to a reactance at 200

kHz of 7 ohms and 1.5 ohms respectively. The 50 ohm A.G Naunton pot selected had an inductive reactance lower than I could resolve at 200 kHz.

The reason for using the two pots switchable via SW2 was to get a better resolution at values below 50 ohms. Resolution of the larger wire-wound pot at low values is somewhat limited by the spacing between the wire turns and its residual minimum resistance value.

The bandpass filter is made up of a 160 kHz fifth order Chebychev high-pass filter combined with a 200 kHz fifth order Chebychev low-pass filter. They are designed for a circuit impedance of 50 ohms and are terminated in R11, assuming high impedance receiver input.

The unit is powered from a 12 V bank of size AA cells mounted in an eight cell battery holder.

Components

There is one thing about working at these low frequencies. We can select integrated circuit packages which just wouldn't work at HF. Typically, the 555 timer and the LF353 amplifier have been selected.

Potentiometers RV1 and RV4 are

carbon types. I would have preferred that RV2 and RV3 also be carbon types but, as discussed previously, low value carbon pots were a bit hard to find.

Inductors L1 to L6 are "off the shelf" miniature RF chokes normally available from electronics stores such as Dick Smith Electronics.

Transformer T1 was made up with 20 trifilar turns wound on a 16 mm ferrite toroidal core recovered from some old gear. The core measured an A_L factor of 1125 mH/1000 T. From this, we deduce that the primary inductance is 450 μ H giving a primary reactance of 453 ohms at 160 kHz and adequate for the application (as a rule of thumb, the primary reactance should be at least three times the circuit impedance at the lowest operating frequency).

Of course a maker's type number cannot be quoted for the core but, if anyone is interested, Amidon types FT50A-72, FT50B-43 and FT82-72 have suitable ferrite and A_L factors close to that given above.

The three gang 20 to 460 pF variable capacitor C10 is an old receiver type often picked up at amateur "buy and sell" marts.

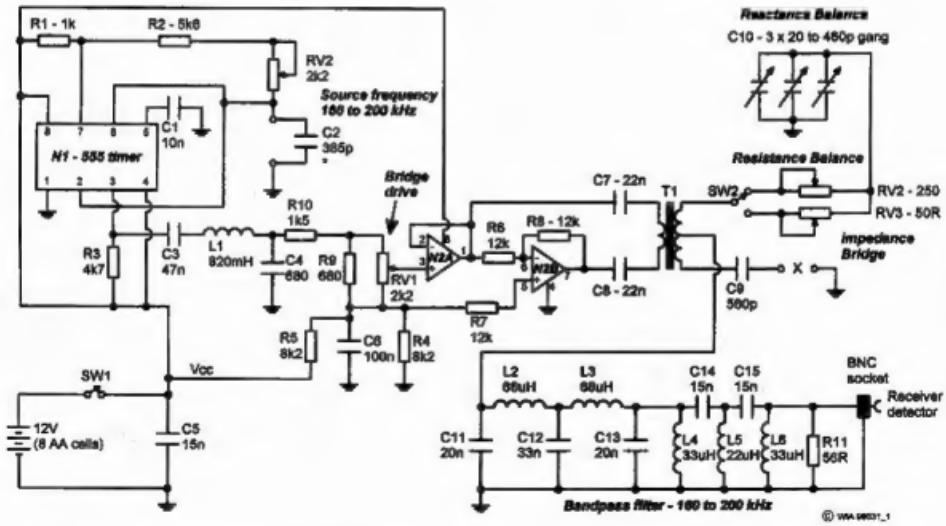


Fig 1 - Schematic diagram for the LF 160 to 200 kHz bridge.

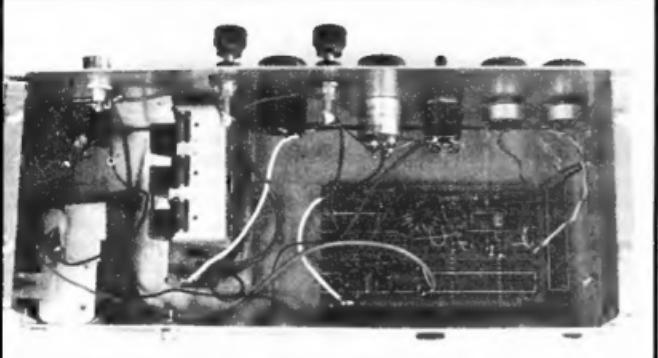
N2 - LF353

T1 - 20 tri-filar turns on a 16 mm ferrite core with an A_L

factor of 1125 mH/1000 T.

C2 - Adjust value for frequency range.

L1-L6 Miniature RF chokes (off shelf).



Internal view from the top of the LF Antenna Bridge. The battery pack is at the lower left of the photo, with the three gang reactance balance capacitor to the right of it.

Most of the other components are non critical. Good silver mica capacitors are used for oscillator timing (C2) and in the bridge (C9).

The aluminium case was re-cycled from some other old gear which had been dismantled.

Calibration and Measurement Range

To be of use, the resistance dials coupled to RV2 and RV3, and the capacitance dial coupled to C10, had to be calibrated against known values of resistance and capacitance.

RV2 is calibrated in a range of 20 to 250 ohms. RV3 is calibrated in a range of 0 to 50 ohms. Positive capacitance of C10 is calibrated in a range of 70 to 3000 pF.

Reverse capacitance is calibrated in terms of inductive reactance at 180 kHz over a range of 0 to 1000 ohms.

Using this type of bridge (as used in the normal HF noise bridge), derivation of capacitive or inductive reactance at a given frequency from the scale as read can be a bit tricky.

For capacitive reactance, simply use the normal reactance formula, $1/2\pi fC$ where C is the capacitance read and f is the frequency.

For inductive reactance, divide the inductive reactance read by the ratio f/f_0 at 180 kHz.

As with the noise bridge, there is a calibration where reactance is virtual zero; that is when the capacitance side approaches infinity and the inductive reactance side approaches zero.

As this virtual centre is approached, resolution of precise values becomes cramped; the highest capacitance calibration is marked at 3000 pF and the lowest inductive reactance calibration is marked at 100 ohms.

Summary

I have described an instrument which can be used to measure reactance and resistance components in the LF range of 160 to 200 kHz. Whilst it is not a precision instrument, it can be carefully calibrated to provide useful readings of the antenna constants and be used to assist in adjusting matching to the antenna.

Specification summary:

- *Frequency Range - 160 to 200 kHz
- *Bridge Resistance Range Calibration - 20 to 250 ohms and 0 to 50 ohms
- *Bridge Capacitance Range Calibration - 70 to 3000 pF
- *Bridge Inductive Reactance Range Calibration - 100 to 1000 ohms at 180 kHz
- *Power Source - 12 V battery (8 AA cells).

At the time of writing, the February 1998 issue of *Amateur Radio* had just been released. In that issue, a press release by the Federal Media Liaison Officer announced the intention by the WIA to revive a submission for an LF band allocation (*Reference 3*).

As the press release indicated an intention to include application for frequencies below 160 kHz, I must now consider the possibility of extending operation of the instrument down to lower frequencies.

The bridge would work OK at the lower frequencies but the oscillator frequency range would have to be expanded downwards and the cut-off frequency of the high-pass filter section would have to be lowered.

As the main function of the complete filter is to remove MF broadcast station interference, it is also probable that it might be satisfactory just to disconnect the 160 kHz high-pass section leaving only the 200 kHz low-pass section in circuit.

References

1. Bob Slutkin VK3SK - Series of articles on the noise bridge - *Amateur Radio*, March, April, May 1981.
2. Lloyd Butler VK5BR - Another Tip for Using the Noise Bridge - *Amateur Radio*, December 1994.
3. WIA News, WIA Revives Submission for LF Band Allocation, *Amateur Radio*, February 1998.



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■ Equipment Review

Icom IC-706MkII HF + 50 MHz + 144 MHz All Mode Transceiver

Ron Fisher VK3OM
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Beaconsfield Upper VIC 3808

It's almost three years since I reviewed the original IC-706 (November 1995 issue of *Amateur Radio* magazine). Just over a year ago ICOM introduced the IC-706MkII with claimed better performance in several areas.

Well, is the Mark II version really better than the original IC-706 or not? Read on and all will be revealed. We have subjected both models to close laboratory testing and the outcome is very interesting indeed. Also, there is a very interesting option available for the Mark II version that has not been widely publicised for some strange reason. In fact, perhaps we should call the current version the IC-706MkII and a half.

What Is It?

First, though, a quick description of the IC-706 just in case you haven't got the original review and you don't know anything about the transceiver.

The IC-706 is a miniature 100 watt HF and 6 metre transceiver with 10 watts output on two metres. At the time of its introduction it created quite a sensation. After all, to include all of that in a package just 167 mm wide, 58 mm high and 200 mm deep was quite an achievement.

Of course, its main claim to fame was the detachable remote front panel which allowed the main body of the transceiver to be located under a seat, or in the boot of the car, with the front panel easily mounted near the driver's seat. In terms of what it can do, compared with its overall size, it hasn't been surpassed to this day.

Early Problems

However, there were a few slight

problems with the original version that really should not have happened in the first place. Top of the list was the very poor transmit quality on SSB. Second, but perhaps not as important, was the rather variable receiver sensitivity in the VHF general coverage range. While the amateur band sensitivity was very satisfactory, reception above 148 MHz dropped off to almost zero up to the limit of 200 MHz. Also, many operators considered the two metre output of ten watts was just a bit too low.

Let's cover the above problems one by one and see just what Icom have achieved with the Mark II version.

Transmit Audio Quality

The transmit quality problem was a strange one. It seems that the problems

we encountered in our original review were confined to some early models of the first production run. Later serial numbers had improved quality. To check this, I borrowed a Mark I model and tested it. It was better than our review transceiver.

The latest Mark II proved to be very much better again. The three response curves published in our present review show the differences between our early review transceiver, a later Mark I and the current Mark II.

Now, I have to ask the question as to why Icom did not put out a bulletin about this. Why did they allow a poor report on one of their latest models at the time go unanswered? I am sure that their lack of action lost sales. They certainly lost mine.

Talking to Icom Australia recently, I was told that early models with poor transmit audio were modified when returned to Icom Australia for service. If you have an early model, suspect that you may have a transmit audio problem, and it hasn't been back for service, contact Icom and find out what they can do for you.

Having said that, the latest Mark II has very good transmit audio. Reference to the published response curves tell the story. The Travellers' Net co-ordinators gave their seal of approval and on-air reports were very satisfactory.



The Icom IC-706MkII HF + 6 m + 2 m all mode transceiver and the matching HM-103 handheld microphone.



A bottom view of the IC-706MKII with the case removed and the DSP board lifted

Receiver Sensitivity

Now to the next problem of receiver sensitivity. Let me say that I really did not consider this to be an important issue.

On the original review transceiver I was able to hear the local fire brigade service without any trouble and other transmissions in the 170 MHz region. However, I didn't actually carry out any sensitivity tests apart from those on the normal amateur bands. I might guess that many operators would not even use their IC-706s outside the amateur bands.

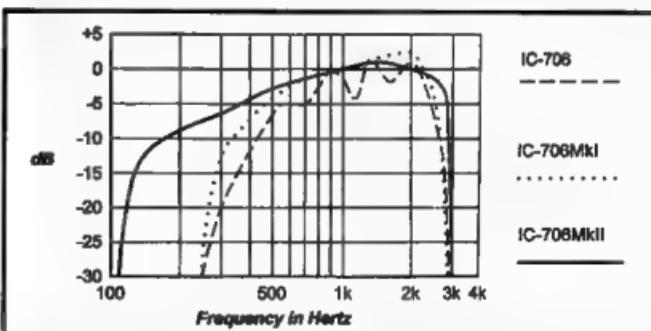
So, again I called in the services of John Patterson VK3ATQ to do a series of measurements on the latest Mark II and an original Mark I (serial number 1041). They proved to be most interesting (see Table 1). All measurements were taken with the pre-amp on, the transceiver in SSB mode, and a bandwidth of 2.4 kHz.

Measurements were not taken above 180 MHz due to the poor performance of both models.

A word or two of explanation of the figures in Table 1. Where the noise figure of greater than 20 dB is indicated, this shows that the sensitivity is below a useful figure. In this case the sensitivity is labelled as na (not applicable).

Table 1

Freq MHz	IC-706MkI noise sens (dB)	IC-706MkII noise sens (dBm)
30	6.3	-134.5
40	14.1	-126.2
50	6.1	-134.1
60	5.4	-134.8
70	3.3	-136.9
80	2.9	-137.3
90	4.2	-136.1
100	5.2	-134.9
110	3.9	-136.3
120	8.6	-131.6
130	>20	na
140	>20	na
144	2.3	-137.9
150	>20	na
160	>20	na
170	>20	na
180	>20	>20



Transmit audio response curves of the original IC-706, the later IC-706MkI (s/n 1041), and the IC-706MkII. Measurements were taken with a power output of 20 W at 1 kHz on 14.200 MHz USB with no ALC, no compression, and the carrier set to -40 Hz.

The comparison is interesting. It shows a great improvement above 148 MHz for the Mark II update model and a very slight improvement for the 50 and 144 MHz amateur bands. However, for the aircraft band, the Mark I is slightly better.

The two metre output problem was fixed by increasing the power to 20 watts. A small but worthwhile increase, possibly important if you are driving an external amplifier that requires more than ten watts drive.

Digital Signal Processing

That's right! Did you know that DSP is available on the latest IC-706? Icom certainly haven't publicised this feature. The only mention I have seen is in the option list of the latest sales brochure. There is no mention of it in the instruction manual at all. Icom promised to fax me the relevant instructions for the DSP but, at the time of writing, this had not arrived.

The DSP unit, the TU-6, is not included in the basic price but is a \$158 option. When installed, a very easy plug-in procedure, it is operated via the menu system (actually S4). If the DSP board is not installed you will only be able to get to S3 in the menu sequence.

The DSP operates in the audio end of the receiver and has an automatic notch filter and noise reduction facility. The noise reduction level is adjustable, again via the same menu setting.

On-air tests showed that the notch filter worked very well and I actually found the noise reduction to give a slight improvement to the readability of signals.

with a noisy background. If you are in the market for an IC-706, give consideration to including the DSP. It is worthwhile. The same DSP unit is also offered as a plug-in option on the IC-PCR 1000 computer receiver.

However, I note with interest that the UT-106 DSP unit is included as a standard feature on all IC-706 Mark II transceivers sold in the UK. They even call it the IC-706MkII DSP.

Other Improvements

That covers the main improvements, but there are several other changes that are welcome and worth mentioning.

The cooling fan is now controlled with a thermostat and only operates when the transmitter reaches a pre-set temperature. This makes for much more relaxed operation compared to the earlier model where the fan was on the whole time.

Split cross band operation is now available if required. For some strange reason this was not possible on the original Mark I.

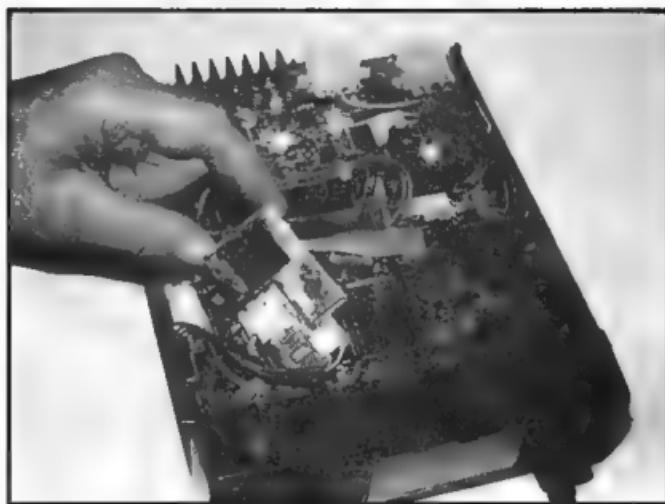
The RIT control of the original IC-706 has gone and has been replaced with a multi purpose 'click stop' control. In addition to RIT this control selects memory channels and also allows moving through the bands in programmable steps the size of which can be selected to suit the mode in use. For instance, 25 kHz is ideal for two metres FM.

The IC-706 Mark I provided space for only one optional filter. Space has been found in the Mk II for two optional filters. You can now have a narrow CW filter and perhaps a wide or narrow SSB filter. There are five optional filters available that include two CW filters of 250 and 500 Hz bandwidth, two SSB filters at 2.8 and 1.9 kHz, and an RTTY or narrow CW filter of 350 Hz bandwidth.

Installation of the filters is easy. They plug straight in and no soldering or removal of circuit boards is required.

IC-706MkII On Air

General operation of the IC-706MkII is a case of good and not quite so good. I guess when you have a front panel of the size to fit this transceiver, the number of controls that can be included is limited. To overcome this, Icom use a menu system, through which a large number



A top view of the IC-706MkII out of its case. The position of the optional plug-in filters can be seen towards the centre immediately behind the front panel.

of functions can be accessed. This is where problems arise.

It might take several button pushes to get to the section that is needed. Such simple things as switching the noise blower on and off can become quite an exercise. To add to this, a copy of the menu instructions is required to give you a sporting chance of finding what you need.

I believe that Icom have recognised some of these problems and have tried hard to overcome them. A new section of the menu now allows quick selection of the three most used bands. You can program any three amateur bands and select any one of them with a single button push.

However, back to the beginning. Initial switch-on is quite different on the new model. Before the transceiver springs into action, the display cycles through an interesting sequence which includes a complete display readout, transmitter power output status and then any RIT offset. This all takes about three seconds after which the transceiver comes to life on the last used mode and frequency.

Received audio quality is now slightly better through the larger internal speaker although the review model had a decided rattle at around 400 Hz. This was

particularly noticeable on steady tone during our testing procedures. For home station use I would recommend a good quality external speaker.

If you intend to remote control the transceiver in the car, an external speaker is essential as the received audio might sound slightly muffled from under the seat or from the boot.

The feel of the tuning control on the 706 is without doubt the best of the small transceivers and the selectable tuning rates are very well chosen.

IC-706MkII Conclusions

There is no doubt that the IC-706MkII is still a leader in its field with features not available anywhere else. The new Mark II version is an improvement over the original model and a vast improvement over our 1995 review transceiver. Providing you can master the complexities of the menu system, the results you get should be excellent.

The Icom IC-706MkII recommended retail price is \$2691. However, if you shop around you might find it at a somewhat lower price.

My thanks to Icom Australia for supplying our review transceiver and to John Patterson for supplying the comparative receiver figures and the loan of his IC-706MkI.

Novice Notes

Ten Metres for the Newcomer

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Novice Notes Online: <http://www.pcug.org.au/~parkerp/nonline.htm>

Introduction

Ten metres (28.000 - 29.700 MHz) is one of the most interesting bands available to the radio amateur. No band supports a greater variety of amateur activity than ten metres - you will hear SSB, AM, CW, FM, repeaters, satellites, DX, award-chasing, contesting and local nets at various times.

Local, interstate, and international contacts are all possible on 28 MHz. Portions of ten metres may be used by all licence grades (except Novice-Limited). The band's wide open spaces and spectacular openings win it many adherents during the peak years of the sunspot cycle.

Propagation

Ten metres is the HF band most prone to variations due to the eleven year sunspot cycle. During the bottom years it is possible to go for months without hearing any overseas stations on ten, but long-distance contacts are an everyday occurrence when sunspot activity is high.

We are currently in the early years of sunspot cycle 23. This is good news to ten metre operators, as openings will become more frequent and produce stronger signals as we approach the sunspot peak, expected for early 2000.

A propagation mode known as sporadic-E provides contacts on ten metres during all phases of the sunspot cycle. Sporadic-E can occur at any time but is most prevalent in summer. Distances covered typically range between 500 and 1500 kilometres, making sporadic-E a useful (but not reliable) propagation mode for contacts within Australia. Signals are often very strong. Mobile stations can do as well as home stations during a good opening.

When there is no long-distance propagation, ten metres is a good band for local operating. Noise levels are lower than on 80 or 160 metres, and antenna requirements are less (particularly for mobile stations). The lack of crowding also makes operating easier. The range and variety of contacts possible is enhanced if your area is lucky enough to be within range of a ten metre FM repeater or simplex gateway linked to VHF or UHF.

Beacons and Repeaters

Because ten metres is 1.7 MHz wide, there is room for modes and activities that would cause interference if carried out on the lower HF bands.

One such activity is beacons. Local clubs have installed beacons to let overseas stations know when ten metres is open to their area. These beacons transmit continuously and send their callsign in Morse. Beacons can normally be found between 28.200 and 28.300 MHz. The *WIA Call Book 99* contains detailed lists of Australian, New Zealand and World beacons.

A special world-wide network of beacons operates on 28.200 MHz as part of the International Beacon Project (IBP). All beacons share the one frequency and are timed so that only one transmits at a time. Australia's IBP beacon is VK6RBP in Perth. IBP beacons also operate on 20, 17, 15 and 12 metres.

Ten metres is most similar to the VHF/UHF amateur bands when it comes to FM and repeater activity. However, ten metres has the added advantage of providing international FM contacts via repeaters during high sunspot years. To use the repeaters, you need a 10 metre FM transceiver that can be set up to transmit and receive on different frequencies to accommodate the repeater's 100 kHz frequency offset.

29 MHz FM Repeater Frequencies	
Input	Output
29.520	29.620
29.540	29.640
29.560	29.660
29.580	29.680

Repeaters permit contacts that would not ordinarily be possible. For example, a station in Sydney may not be able to hear a station in Canberra, but both may be able to communicate via a repeater in Brisbane. Repeater operation gets more interesting if the repeater is also able to retransmit signals from other bands. A list of Australian 10 metre FM repeaters appears in the *WIA Call Book 99*.

Equipment

Commercial Equipment

All current-model HF transceivers cover the entire ten metre amateur band. However, before buying, check that the FM option has been installed, especially if you are a limited licensee restricted to this mode.

Those whose budget does not extend to the four-figure price tag of a new multi-band transceiver may wish to consider buying a 28 MHz-only set, such as those stocked by *Amateur Radio* advertiser Syncro Australia.

Transceivers like these would be particularly suitable for mobile/portable operation or as a second rig for the seasoned 10 metre operator. However, their cost is about the same as a basic multi-band SSB transceiver on the

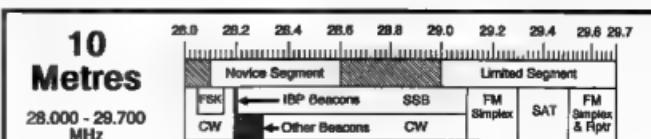


Fig 1 - Ten Metre band plan.

second-hand market. The newcomer to amateur radio should consider the extent to which they will use the other HF bands before deciding to purchase a 10 metre-only set.

Be careful when buying second-hand gear. Some very old valve transceivers did not cover ten metres at all. Other models did include ten metres, but had deaf receivers and/or put out reduced power on 28 MHz.

Some older sets covered only a single 500 kHz segment of ten metres. A 28.000 - 28.500 MHz range is not a great limitation as it includes coverage of CW, digital, beacon and many popular SSB frequencies. However, the owner of a set that tunes 28.500 - 29.000 MHz only is severely disadvantaged. Either avoid buying the set or talk the seller down thirty or forty dollars so you can afford to get a crystal cut for the bottom 500 kHz segment of the band.

Converted Equipment

If you have sufficient technical knowledge and the required information (*Reference 1*), it is possible to convert some models of 27 MHz SSB CB transceivers to operate on 28 MHz. If the modification is done properly, the results obtained are well worth the small cost involved. Some of the older AM-only sets can also be converted to ten metres, but this is not usually worthwhile unless you want local contacts only or have a special interest in AM operating.

It is also possible to convert sets to operate on 29 MHz FM. Either some types of AM-only 27 MHz CB radios or 30-30 MHz FM two-way radios can be converted. The need for coverage of the correct frequency range and inclusion of a 100 kHz repeater offset are complicating factors here.

You probably shouldn't attempt any but the very simplest modifications if you are a newcomer - it is very easy to mistakenly 'butcher' the set and render it permanently inoperative. If you still need a small cheap ten metre set, get someone else to do the modification for you, look for a used, already-converted CB (price range \$10 - 100), or purchase one of the Syncro transceivers.

Homebrew Equipment

For some reason, there are few homebrew designs around for 10 metre amateur equipment. However, constructing one's



A simple home station antenna system using a mobile whip.

own equipment on ten metres is certainly possible for the technically-inclined operator. Limited licensees who wish to use 29 MHz FM, but see no point in buying an HF rig, should seriously examine the possibility of building a transverter to use in conjunction with a six or two metre FM transceiver.

Building an entire transceiver for ten metres is also practical. However, circuits for 28 MHz are usually more complicated than those for lower frequencies.

This is because:

- the gain of power amplifier

transistors falls as frequency is increased, so more stages are needed to achieve a given output power;

(b) 28 MHz variable frequency oscillators are not as stable as lower frequency VFOs, hence the need for a PLL frequency synthesiser or premix VFO;

(c) Fundamental crystals are not common on 28 MHz, and overtone crystal oscillators are difficult to pull over a worthwhile frequency range; frequency multipliers are needed to obtain output from a lower frequency VXO; and

(d) receiver gain needs to be higher on 10 metres than on other HF bands because noise levels are lower. Nevertheless, for the constructor curious about what ten metres has to offer, a five to ten watt VXO-controlled CW or double sideband transmitter or transceiver should not be too hard to put together.

Antennas

Devoted ten metre enthusiasts often use a three to six element mono-band Yagi or quad. This type of installation allows you to work stations that cannot be heard on a simple dipole or vertical.

However, this does not mean that, if you lack high power and big beams, you should give up on ten metres. It's quite the reverse - ten metres is often better than the lower bands if output power or antenna gain is restricted.

With 10-30 watts SSB and a small vertical (eg a mobile whip), it is possible to have dozens of satisfying contacts. During years of low solar activity, these contacts will be mainly within Australia and New Zealand, but the proportion of international contacts will rise with the sunspot count. The stations with the big beams generally have excellent receive capabilities, and can often hear the operator using a converted CB and a cut-down mobile whip.

A mobile whip mounted on a metal railing or balcony is ideal for omnidirectional coverage. Use a whip reasonably close to a full quarter wavelength (2.5 m) for best results. For the last three years, the author has successfully used a 1.8 metre 27 MHz CB whip cut down to resonate on 10 metres (see photo). A 90 cm whip has also been tried but its performance was well down on the larger whip.

Ten-Ten International

Ten-Ten International is an international association that promotes the use of the 28 MHz amateur band. Any station who works 10 Ten-Ten members is eligible to send away for a Ten-Ten number. These numbers can then be exchanged with other 10 metre operators. People who collect a certain number of Ten-Ten numbers can claim various award certificates and upgrades from Ten-Ten International.

Local groups (chapters) of Ten-Ten members have been formed in cities around the world. In Australia chapters exist on the Gold Coast, Bendigo, Melbourne and Perth. Chapters may run their own nets or issue award certificates to foster activity on ten metres. For example, the Perth-based 28 Chapter runs weekly nets (Sundays 0210 and 0830 UTC on 28.560 MHz USB) and issues awards to operators who contact the required number of members.

Further information on Ten-Ten International is available by visiting their Web site at <http://www.lehigh.EDU/lists/tenten-l/>

Operating Frequencies

Novice licensees can use SSB, AM, CW and digital modes between 28.1 and 28.6 MHz. Unlike 27 MHz CB operation, where lower side band (LSB) is prevalent, ten metre SSB operators invariably use upper side band (USB).

Limited licensees can transmit FM voice on frequencies above 29.0 MHz. This allows use of the FM repeaters that exist in this segment. Intermediate and

Unrestricted licensees can use all ten metre frequencies.

Never transmit between 28.198 - 28.300 and 29.300 - 29.500 MHz. The reason for this is that these segments are reserved for beacons and amateur satellites respectively. Following the 10 metre band plan (Fig 1) maximises the chances of getting contacts and reduces the risk of causing interference.

Operating on Ten Metres

There are many times that ten metres is open, but you would not know about it by just tuning across the band. Beacons can help in monitoring propagation, but have their limitations - the band can be wide open to places where there are no beacons. If you suspect the band may be open, but no beacons can be heard, tune across the 27 MHz CB band (particularly 27.355 LSB) and the 29 MHz FM segment to get a better picture of propagation patterns.

If 27 MHz is busy, but there is nothing on 10 metres, it's up to you to create some activity. Several CQ calls in a popular part of the band (28.400 MHz +/- 100 kHz) will often yield results, even when no beacons can be heard. If no results, change frequency and resume calling - your original frequency may have been in use by people who you can't hear, but could be interfering with your transmission in some parts of the world.

As noted before, the stations with the best antennas are those best placed to receive weak DX signals. When conditions are marginal, you will still have contacts, but it will be only with the stations using the bigger antennas. As propagation improves, you will start to

hear more stations using dipoles and verticals in addition to the 'big-gun' operators with the big beams and high towers.

Possessing a powerful transmitter and large antenna array may give you a big signal on ten metres, but does not in itself make you a successful operator. Operator persistence and 'being there' are the main determinants of success on ten metres. If you are listening and are not calling, everyone will think the band is dead and switch off. If you are keeping the band alive by calling CQ, the activity will come to you, and you will work DX, no matter how modest your station is.

Of course, all this calling requires both time and patience. However, technology can be used to call CQ automatically, leaving time for the operator to attend to other tasks while waiting for calls. In its simplest form, an automatic CQ caller can be a tape recorder with a 30 second endless loop cassette placed in front of the rig's microphone (transceiver set to voice-operated transmit (VOX) mode).

Other options include the use of a 20 second digital message recorder set up with a special timing circuit or even a suitable computer with sound capabilities. Whatever method is used, the switching between transmit and receive should be automatic - having manual switching detracts from the labour-saving benefits of an automatic CQ caller.

Conclusion

This article has given the reader a brief tour of ten metres which, to many people, is HF's most interesting band. The band is set to explode with activity in the next few years. Will you be a part of it?

Acknowledgement

I would like to thank Mark Bussanich VK6AR of the 28 Chapter of Ten-Ten International for his assistance with the preparation of this article.

Reference

1. Franklin, L. *The CB PLL Data Book*, CB City International, Phoenix, 1991

WIA Call Book 99

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■ Technical

Technical Abstracts

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Clothesline Antenna

A different multi-band antenna was described in *QST* July 1998 by Robert Victor VA2ERY. This antenna uses hardware sold to make a clothesline. The antenna ends are plastic pulleys used for the ends of a clothesline. These are sold in Canada and the USA and have been seen locally in some hardware shops.

The antenna is a folded dipole on the lowest band. The feed point is then in the middle. On other bands the feed point may be in the middle for odd harmonics but the low impedance feed point is displaced from the centre on even harmonics.

This antenna uses the pulleys to allow the feed point to move to the low impedance point. Fig 1 shows the position of feed points for 3.5 MHz and 7 MHz.

A folded dipole configuration is used for the antenna and this is shown in Fig 2. This allows the antenna feed point to be moved to find a suitable point for operation. The feed is 300 ohms and a balun with a step up ratio of 6:1 is used to match 50 ohm coaxial cable. These are available commercially.

Band changing involves moving the feed point to the appropriate point for the band in use. This can be worked out and then fine adjustment made for best match. The points for various bands can be marked on the wire with a marker.

You may need to use another pulley running along the top wire as a support for the feed point.

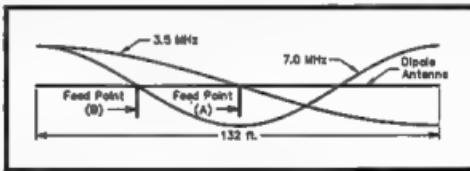


Fig 1 - Voltage distribution of an 80 metre dipole on 3.5 MHz and 7 MHz.

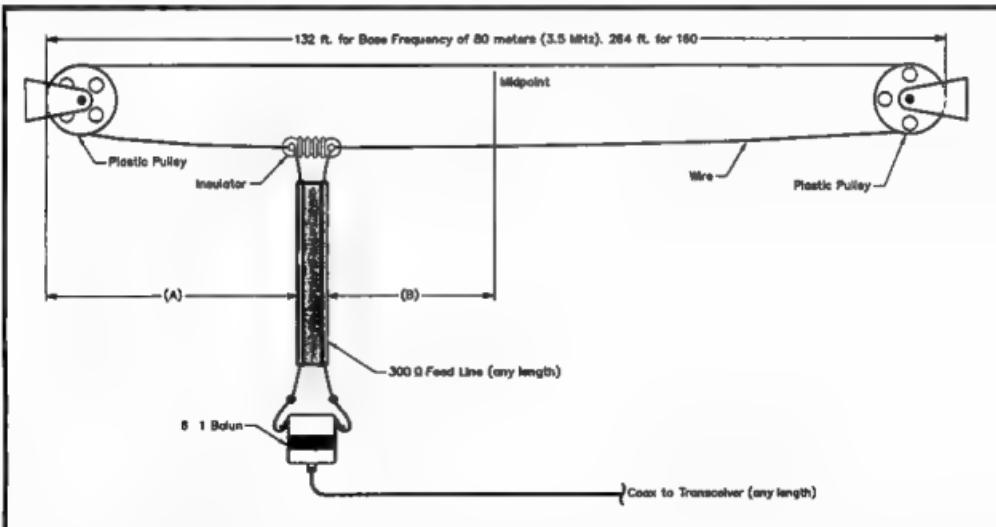


Fig 2 - The Clothesline Dipole. A or B should be set to a quarter wavelength on the band being used.

Optically Coupled Regenerative Receiver

A different way to isolate the input circuit and the regeneration control from the regenerative detector of a receiver was described in June 1998 *QST* by Dan Wissell N1BYT.

A wide band linear opto coupler is used as the regenerative stage. A separate infinite impedance detector is used to provide the audio output. The opto coupler, a Hewlett Packard HCPL-4562, has a low capacitance of 0.6 pF between the base of the opto coupler transistor and the input LED so the input is well isolated.

The receiver detector circuit is shown in Fig 3. The antenna input circuit and the regeneration control are connected to the opto coupler input and are isolated from the base of Q1. Q1 acts as a regenerative amplifier or Q multiplier for the tuned circuit L1 C2. The signal is

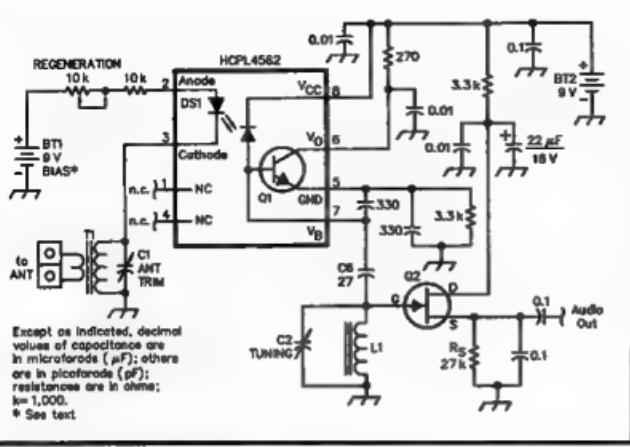


Fig 3 - OCR regenerative detector.

detected by Q2 which functions as an infinite impedance detector. Q1 is gain controlled by the bias applied to the LED. This is the regeneration control. The bias requires a separate battery supply to maintain separation and to ensure low noise. Any noise will be coupled into the regenerative stage and amplified. A regulator would require sub microvolt noise output to function here as the bias supply and so a separate battery is a simpler option.

The circuit of a full 40 metre receiver was given in the *QST* article together with sources of components. The receiver is

available as a kit from Jade Products Inc, PO Box 368, East Hampstead, NH 03826-0368. The US phone number is 603-329-6995. The Internet Web address is <http://www.jadeprod.com/>. The e-mail address is jadepro@jadepro.com. The kit price is \$US84.95 plus shipping and handling. Shipping in the USA is \$US7.00 but to Australia would be higher and you should contact them first. A PCB can be purchased separately.

Audio Peak Clipper

A n audio peak clipper with independent adjustment of positive

and negative peak clipping levels was described in July 1998 *QST* by John Robert Burger WB6VMI. This allows tailoring the clipping to suit your voice.

The clipper is shown in Fig 4. The clipper accepts line level audio from the microphone preamplifier at 100 millivolts. The audio is then amplified and clipped. The positive and negative clipping levels are independently adjustable. The clipped audio then passes through an audio filter. The filter is an active filter and is a two pole Chebyshev design which smoothes the sharp clipping and reduces audio harmonics out of the voice audio bandwidth.

Output level is also line level of around 100 millivolts. The components used are all readily available.

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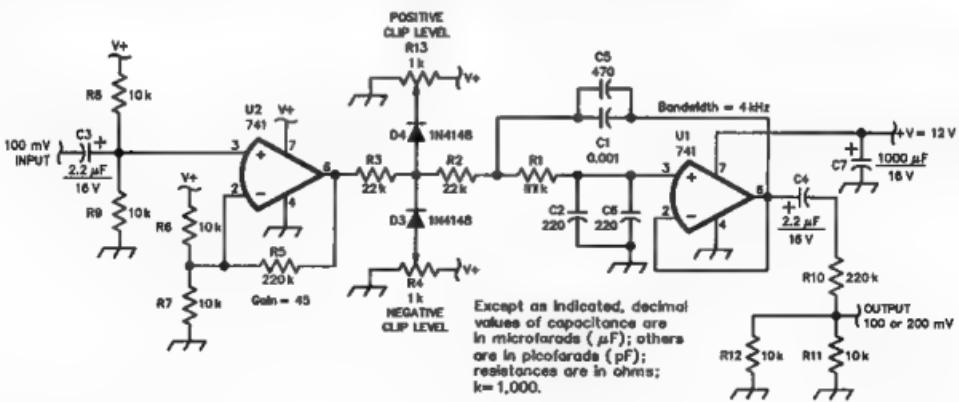


Fig 4 - Audio peak clipper.

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■ Repeater Link

16 Digit DTMF Decoder

Will McGhie VK6UU
21 Waterloo Crescent, Lesmurdie WA 6076
Packet: VK6UU@VK6BBR
E-mail: will@vele.faroc.com.au

16 Digits

The DTMF decoder featured in past *Repeater Link* articles only decoded 10 digits. This was done for simplicity, and reducing the size of the design. However, there are a total of 16 digits available for decoding and the accompanying circuit does this. The digits are 0 to 9, followed by * and # and 4 more buttons often called A, B, C, and D.

The output of the DTMF decoder chip is 4-bit BCD and this equates to 16 possible outputs. No modifications are required to the DTMF decoder chip. What is required is to change the BCD-to-decimal decoder chip to one that decodes all the possible 16 codes. The 4514 does the necessary decoding with a valid high output.

Bit Strange

After I built up the 16 digit decoder, testing found that digit "D" would not decode. All the other digits worked but not D. After a lot of trying to figure out what was wrong, I discovered that I was using the A version of the 4514!

Yes, there are different versions of the 4514! The fine print told me that only the B version enabled the D output on pin 11. Why is this so?

The BCD code to produce a high on pin 11 (D) is 0, 0, 0, 0, all zeros. The all-zero BCD code would come up often in digital circuits when they are doing nothing. This would result in there being a high on pin 11 (D). The DTMF decoder falls into this situation.

With no DTMF input the BCD output is all zeros and is of little use. This may be why there are two versions of the 4514. One with the D output enable and one without.

disabled via pin 23 of the 4514. Problem solved.

The B Version

Don't be fooled by what is a B version of the 4514 if you want to use digit D. Printed on the 4514 chips I have is CD4514BCN. It appears that the B after the 4514 does not mean it is a B version chip as the D output does not operate in the chips I have. If you know of a source of B version 4514s, please let me know.

Photos

I have included two photos of the construction of the DTMF decoder using Tandy board. This type of Veroboard is now also available from Dick Smith, catalogue number H 5603, and measures 72 X 47 mm.

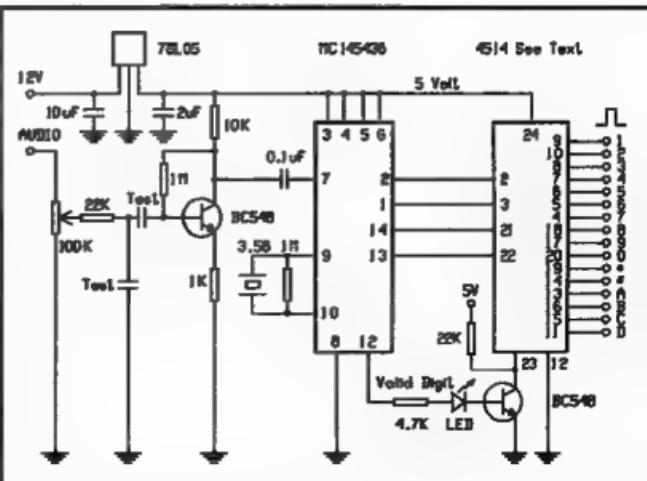
Note that the pads are isolated from one another, unlike normal Veroboard, and require joining. This is done by using a cool soldering iron to bridge the gaps. If the iron is too hot the solder tends to run back to each pad making it hard to bridge them. I find having to join pads is easier than having to isolate pads in the older style of Veroboard.

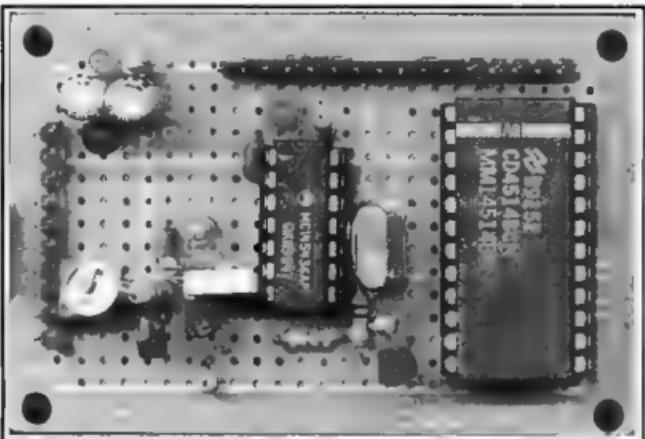
The photos are not intended to be copied but are simply to show one form of construction. Note that there are two connectors on the board. The 10 pin SIL on the left is for power and DTMF audio

The 4514 is a BCD-to-16 digit decoder and latch. The last DTMF signal results in a high on the corresponding pin of the 4514 that remains after the DTMF signal has stopped. This is not what is wanted and the problem is solved, along with the D problem, by using the output disable pin of the 4514.

In order for there to be an output from the 4514, pin 23 has to be grounded. This pin is only grounded when there is a DTMF signal present and this is achieved by using the valid digit (any DTMF digit) logic on pin 12 of the DTMF decoder chip.

Note that, even with no input to the DTMF decoder and all BCD lines being zeros, and hence D being high, D is actual low due to the outputs of the 4514 being





A top view of the completed 16 digit DTMF decoder.

in, etc and the 16 pin SIL at top right is the 16 digit outputs.

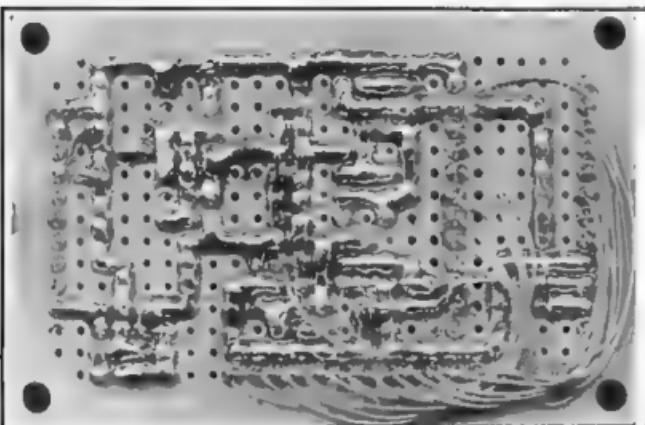
The photos were not taken with a camera but a flat bed scanner. The depth of focus on a flat bed scanner is considerable and the results very good on 3D objects.

These "photos" were then JPEG compressed and e-mailed to *Amateur*

Radio. The joys and ease of the digital computer age when it works!

Next Month

Next month, some thoughts on 10 kHz spacing of repeaters on the 2 m band. This idea has been put forward by Robert VK2MT for comment and I will present his ideas for your consideration. ar



The underside of the 16 digit DTMF decoder board.

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■ Computers

A Simple CW Practice Oscillator

Steve Page VK6BGN/AA6SN
PO Box 383
Wickham WA 6720

Introduction

After arriving in Australia a few years ago I decided one day to brush up on my Morse code sending speed as it had fallen well below the 20 wpm I had originally attained for my extra class licence in North America.

After looking through the junk box for parts, I discovered that I had either sold or donated most of my parts before immigrating; not even a 555 timer could be found. Looking around the shack for some sort of tone generator, my thoughts were directed to my IBM compatible computer. It can generate tones, has a speaker for sound output and the game port as an input port for the key. I then decided to make my practice keyer software based, rather than hardware based, and this is what I did.

Input Port, Parts and Pin Outs

I chose the 15 pin game port because it is not being used, I do not own a joy stick, it will provide a direct connection to the Morse code key, and both serial ports and the parallel port are being used by permanent devices such as the printer, mouse and SSTV converter. It is also my understanding that the serial or parallel ports would require some sort of interface.

You will need a DB15 male plug which is available from Dick Smith Electronics, and two lengths of wire long enough to go from the game port on the back of your computer up to the top of the desk where the Morse code key is. This wire should be small in diameter. I used twisted pair bell wire of about 0.5 mm diameter. Good soldering technique may be in order here as the pins on the DB15 plug are quite small.

I soldered the wires onto pins 2 and 4 on the DB15 plug. This would normally be the lower button on the joy stick. Other pins on the plug can also be used but a change in programming would be needed. All pin out information for the DB15 game port can be found in the back pages of the DSE catalogue.

The Program

I chose Q-Basic as the programming language because I found a copy of it in my DOS directory and I was able to purchase a cheap programming book from a second hand book store. However, I am sure other languages could be used, and probably should. Probably a Windows based program would be better.

The program is very simple and only uses a few lines of code. Nothing elaborate here. As a matter of fact the screen will be blank while running the program. To exit, just hit the Escape key.

```
CLS
DO
ans$ = INKEY$
IF STRIG(1) = -1 THEN a% = 1 ELSE
a% = 0
SOUND 800, a%
LOOP UNTIL ans$ = CHR$(27)
END
```

Now plug the DB15 connector into the game port, hook up your Morse code key and run the program. While holding the Morse code key down, an 800 Hz tone will be heard from the PC speaker; of course, nothing will be heard when the key is up. You may change the number 800 to any number that suits your ear. Be realistic; anything below 37 and above 32768 will not work, at least on my 486 DX100 computer.

Succeed or Not to Success

I feel I have succeeded in adding a CW practice oscillator to the shack and without adding yet another gizmo, gadget, box, or converter to the already cluttered desk top. But I've failed dramatically in the programming area. I originally set out to achieve the goals listed below but was totally overwhelmed:

General

1. Windows program.
2. Adjustable frequency of the tones.
3. Adjustable volume of tones.
4. Output tones to the sound card speakers for better fidelity.

5. Choice of straight or paddle key mode.
- Straight key mode

1. Display the text as I practice keying.
2. Calculate and then display WPM.
3. Display unrecognised characters as errors, possibly with an *.

Paddle key mode

1. Adjustments for speed and weighting.
2. Display a WPM figure as a function of speed and weighting.
3. Iambic keying.
4. Ability to remember characters when keying ahead.

Conclusion

The finished product is a simple bare-bones Morse code practice oscillator for your shack with many avenues for improvement.

Rather than using the computer as a practice oscillator, could it be used as a keyer, too? Key IN on the game port and OUT on the parallel port? Drive an IC chip or relay to key the radio? Memories in software for contesting?

Are the hardware based keyers doomed to be obsolete? Who knows, the sky's the limit.

The great programming feat I leave to my fellow amateurs. If you succeed, please send me a copy as I would love to use it. Good luck.

About the Author

First licensed as a Novice Class in Los Angeles as KB6PCD in 1986, Steve followed this with a Technician Class in 1988, the Advanced Class in 1988, and the Extra Class in 1989 as AA6SN. Steve visited Australia in 1991 and acquired the callsign VK6BGN. He eventually immigrated to Western Australia in 1995.

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■ History

Ron Morris VK3APM (SK)

John L Morris VK2BES
PO Box 202
Kiama NSW 2533
e-mail vk2bes@ozemail.com.au
Packet: VK2BES@VK2XGJ

Ron Morris VK3APM, a dedicated radio enthusiast for more than seventy of his long life of ninety three years, passed away on 23 August 1997.

He was born in Ballarat, Victoria in 1904, only three years after Marconi established communication between Cornwall, England (where Ron's mother was born) and Newfoundland, Canada. He came from English, Irish and Welsh stock and attended the Ballarat School of Mines which will be known to many readers. During that period he developed an interest in radio, constructed his first receivers and became proficient in Morse Code.

In early days, permits to transmit were issued by the Department of the Navy. Ron passed the required examination and was issued with a callsign which I believe was A3AP (see reference to *Radio Weekly* below). After about 1920, the Department of the Post Master General (for younger readers, that Department was a combination of what are now Telstra, the Australian Communications Authority and Australia Post) took over the issuing of licences.

In 1925 Ron was issued the callsign VK3APM. His AOCP (Amateur Operator's Certificate of Proficiency) No 150 was issued on 22 July 1925. He was commended by an official of AWA (Amalgamated Wireless of Australia) as an exceptional candidate.

The *Radio Weekly* published an article in its 25 March 1935 edition entitled "An Up To Date Amateur Radio Station - A Description of 3AP to Become VK3APM". A photograph shows the gear and the article states "Herewith is a description of 3AP, Mr Ron Morris's up-

to-date station at Caulfield, which is frequently heard on both long and short wave amateur bands....the receiver consists of one stage of tuned anode detector and one stage of audio...the aerial is a four wired tapered cage, 50 ft high and 80 ft long...."

First Utility Mobile Radio

In 1929 the PMG granted a licence to the Victorian Electricity Commission to experiment with one way voice transmission to vehicles. The Police Department, Fire Brigade and Tramways Board were also proceeding in the same direction. Ron became involved in radio communication with the SEC and built their first mobile receiver.

One of the senior officials of the SEC was home with an injury and Ron visited him, leaving the volume of the mobile radio turned well up as he parked the car outside. They both were jubilant as the sounds of the Tramways Board transmitter could be clearly heard from inside the house.

The SEC then decided to build a transmitter of its own. The first transmitter was based on a Philips 250 watt valve, a self excited oscillator, and simple grid modulation.

The antenna was an 80 ft counterpoised mast. Improvements came thick and fast - indirectly heated filaments, motor generators, vibrator power supplies and two-way frequency modulated transceivers.

Initially the SEC used Singer cars, then A Model Fords. Ron devised an antenna from army surplus 100 ft lengths of wire, winding the wire in a huge coil around and under the fabric hood until

the 100 ft was used up. It is reported that it worked well - unless wet!

As can be well imagined there was "some interference" from the ignition system of the vehicle. However, the drivers did not complain.

Being the driver of a vehicle with a radio in it carried a kind of status at that time and, in addition, they were reported as being interested and enthusiastic in this radio experimentation!

The transmitter VHO was located first at Richmond and then in Flinders St. It was remotely controlled and did double duty for the SEC and Tramways Board. Amusingly enough, although it may have been looked upon as very serious business at the time, the operators were issued with a new axe on the outbreak of WW2 together with instructions for the destruction of the transmitter in the event of invasion. It would be a real test of national spirit to have to destroy such a labour of love, especially with an axe (why not something really technical like a zap of 66,000 V AC which the SEC could surely provide?).

After forty years of service, Ron retired from the SEC in 1969. A letter to him from the Secretary of the SEC (Mr Chippendale) states that Ron Morris "was responsible for the building and installation of the first mobile telephone system to be licensed in the Commonwealth".

Link With Flynn of the Inland

No documentary evidence is available but, from information provided by his son, it appears that Dr John Flynn sought advice from Ron with regards to communication problems with the fledgling



Amateur Radio Best Contribution Awards

Each month the WIA Amateur Radio Publications Committee selects the best contribution to that month's magazine and awards a certificate to the contributor concerned.

The first two have been announced in *WIA News*, but the succeeding three have been accidentally omitted. They are: for July 1998, Sally Grattidge VK4SHE now retired after years of effort in compiling the ALARA column; August 1998, Gil Sones VK3AUI (Technical Abstracts); and September 1998, Ron Fisher VK3OM (review of the Yaesu FT-847 transceiver). Certificates have been sent to all these award winning contributors.

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Inland Mission Service (later the Royal Flying Doctor Service). In Ion Idriess' book "Flynn of the Inland" (1936) there is a reference to the difficulties of developing a receiver/transmitter that was simple, robust, and inexpensive so that "every bush mother could handle it". "What a madman's dream", he wrote, "but the wireless men could not resist him or the dream, though they doubted its realisation...then they set to work, each is his own way, in his own time, in his own workshop".

Such a description typifies Ron VK3APM (and so many other amateurs of the day) who spent countless hours alone in their amateur workshops conducting countless experiments with mostly old pre-loved gear and army disposals equipment from two wars.

Ron was ever willing to share his extensive knowledge of the art, craft, and science of radio communication in the best tradition of the hobby. As Ron's nephew, and being about 12 years of age at the time, I recall that, after being quite excited by a conversation about radio with Ron, I was presented with a 1927 edition of the ARRL Handbook (at that time only about 2 cm thick). That dog-eared well-used document became a prized possession and the source of all kinds of arcane knowledge and experimentation (some of which worked). I eventually became VK3AES (now VK2BES), having received my AOCP

■ Try This

Yoghurt Container Sound Projector

A cheap alternative to an external speaker

Peter Parker VK1PK
7/1 German Place
Gerran ACT 2605
e-mail: parkerp@pcug.org.au

Yoghurt containers have a number of uses in the shack. These include holders for pens, components and other bits and pieces.

Here is one more use for your spare yoghurt containers. It is a sound projector, which projects the received audio towards the operator rather than towards the ceiling. It's a useful accessory if your transceiver has an upwards-facing speaker and you lack an outboard speaker unit.

Construction

Construction is simple. Firstly choose your yoghurt container - 200 g for small speakers and 1 kg for larger speakers should be fine. Then make a large square hole in the side of the container. This could be done with an old soldering iron or with a heated nail (use a gas stove) held in a pair of pliers.

Do this type of work in a ventilated area or outside to minimise exposure to

fumes from melting plastic.

Operation

In use the inverted yoghurt container is placed on top of the transceiver's speaker with the square hole turned towards the operator. There should be a small improvement in weak signal readability compared to when the transceiver is used without the projector.

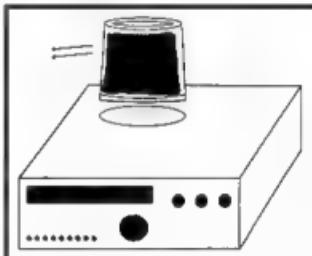


Fig 1 - Yoghurt container sound projector.

in 1958 after studying at the same Marconi School of Wireless in Melbourne which Ron attended so many years before. What a grand tradition we have in amateur radio!

Right up to the last year of his life Ron was active in amateur radio, mainly on 21 MHz and on CW. What memories he must have had in his latter years - his life spanning the development of radio in this country from the days of spark transmitters and coherers to the high speed digital modes of today.

Errata or Further Information

This brief article about Ron was prepared from material gathered by his son Allan, who now resides in Perth, WA. If readers find errata in this chronicle, please be assured that such errors were unintentional; I found it is not easy to obtain this kind of historical material after such a long time span. If you have any further information or corrections, please send it to me at one of the addresses at the head of this article.

■ Book Review

WIA Call Book 99

Publisher: Wireless Institute of Australia
 Size: 270 by 210 mm, 168 pages, soft cover
 Reviewed by: Bill Rice VK3ABP

Even if you have a copy of last year's Call Book, there are still very good reasons to invest in the latest issue, just "hot off the press".

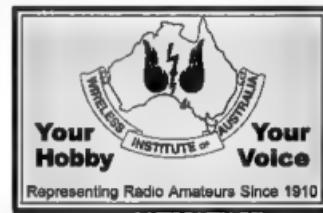
To begin with, at 168 pages, it is by far the largest WIA Call Book yet produced. The latest lists of callsigns occupy 92 pages and you will be pleased to know that those with two-letter suffixes again appear before the three-letter calls in each State.

The other 76 pages comprise not only the updated lists of beacons and repeaters, as usual, but all the WIA Band Plans, the world's 6 metre, 10 metre and HF beacons, and all the Australian AM and FM broadcast stations. But that's not all! There is a feast of information about

becoming a radio amateur, how the Exam Service operates, a packet radio directory, Australian and New Zealand TV channels, VHF-UHF records and dozens more related topics.

An added bonus is a *Callsigns on Disk* supplement available for an additional \$10, but only to purchasers of the *WIA Call Book 99*. This 3.25 inch floppy disk contains all the Australian amateur station listings in a vertical-bar delimited ASCII file ready to be loaded into your favourite word processor, spreadsheet or database.

At a recommended retail price of \$16.00, it must be the best value-for-money Call Book in years!



air

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 2 Pole 11 Position ceramic switch - \$59

1 kW Antenna Tuner
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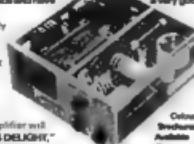
Great Special AEA-IHF Isolator Base Station Antenna for amateur and CB bands
 \$60.00

EmtronDX-1

The Connoisseur's Delight!

The EMTRON DX-1 is built in modular form. This approach makes it very easy to upgrade (by just replacing a module) and accommodates DXpedition junctions and have look at the EMTRON DX-3.

The EMTRON DX-1 is technically the most advanced and compact 1/4w output linear amplifier on the market today. It delivers more power than the T-922 at the same price. We believe that due to DX-1's compactness, low weight and absolute reliability, this amplifier will become "THE DX PEDITION'S DELIGHT," and a benchmark for all 1kW amplifiers.



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TE-23-3-band 2-element beam.	\$489	TE-57 3-élé beam on 14-21-28MHz	\$1060
TE-23M 3-band 2-élé. maza beams	\$485	2-élé on 10-18-25MHz	\$1060

TE-23W 3-band 2-élé. WARIC	\$495	TE-47 3-élé beam on 14-21-28MHz	\$1150
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TE-33 3-band 3-element beam	\$675	1-élé on 10-18-25MHz	\$1150
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TE-33 3-band 3-element beam	\$685	40MHz	\$950
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TE-57 3-élé beam on 14-21-28MHz	\$1150	TE-57 3-élé beam on 14-21-28MHz	\$1150
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2-élé on 10-18-25MHz	\$1150	2-élé on 10-18-25MHz	\$1150
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1-élé on 7 MHz	\$795	1-élé on 10-18-25MHz	\$1150
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TE-44 4-élé beam on 14-21-28MHz	\$1150	3.5-20m Wire Trap Dipole	\$180
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1-élé on 7 MHz	\$900	ED-62c for amateurs & hamfest \$180	
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		size	
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		fixed or mobile	
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 **EMTRONICS**

■ Book Review

The Novice Operators Theory Handbook

Author: Graeme Scott VK2KE
Reviewed by Ron Cook VK3AFW
ISBN: 0 646 30162 4
Paperback: 297 by 210 mm, 92 pages
RRP. \$16.00

General

There are three reasons why you might want to buy this book. Firstly, you do not have an amateur licence but would like to have one; secondly, you might know of someone who would like to be an amateur and you would like to give a useful present to them; and thirdly, you might want to run a class for aspiring amateurs. This book is an admirable solution to any of the above situations. Whilst I found minor imperfections in the text, I can recommend it as an inexpensive reference for the would-be Novice Operator.

Graeme Scott is an amateur and a teacher of many years experience who has combined both attributes to produce this book. It is written in an easy-to-read conversational style with lots of diagrams and very little maths. For those undertaking a private study course based on this book, there is a companion volume, the *Novice Operators Theory Study Program* also written by Graeme.

What's In It?

In some 92 pages Graeme covers all the essential background material required, not only to pass a Novice amateur licence exam, but also to provide a basic understanding of the technology of radio communications.

There are 14 chapters which cover the complete theory required for the Novice Amateur Operator's certificate exam and are intended to be used for a self training course or as the text for a classroom teaching situation. Having read a chapter, the reader can then test their knowledge on questions at the rear of the book. The answers to these questions can also be found at the end of the book. There is an

appendix which covers the Morse code and another which is a glossary of technical terms.

The first edition was published in 1981, and the book has been responsible for helping several thousand students become happy amateurs.

More On What's In It

Ohms Law, and the most basic physics and maths relating to series and parallel connection of resistors, cells and batteries, electromagnetism, AC generation, transformers, relays, inductors, capacitors, tuned circuits, piezoelectric effects, the decibel and attenuation are covered in Chapter 1. The treatment is generally very good and Graeme is to be commended for the copious use of illustrations and figures, not only in this chapter, but throughout the whole book.

However, I do have a minor criticism of this chapter. Although the terms "logarithm" and "log" are used, neither is explained. It may be apparent that "log" is the abbreviation for "logarithm", but what is a logarithm? It is not an easy concept to explain which is probably why even the *ARRL Handbook* omits any explanation. (Common logarithms are numbers to which the number 10 must be raised to give other numbers. For example 0.301 is the logarithm of 2, that is $\log(2) = 0.301$. It means that $10^{0.301} = 2$. While this may seem a clumsy thing to do, before the advent of calculators and computers, logarithmic tables were

an indispensable aid to doing complicated engineering maths. Further, the use of logarithmic numbers simplify many other mathematical expressions.)

Chapter 2 is two short pages with common symbols and their names. The graphics tell it all.

Chapter 3, Mathematics, is also very short. Too short I thought, as it says that, amongst many other mathematical topics, the student needs to be able to understand graphs and binary logic, yet neither topic is covered here.

Graphs appear in profusion elsewhere in the book, but the basic theory is not in this chapter. Of course it might be argued that by the time you get to reading this book you will have developed a grasp of graphs. Binary logic is absent totally from the book. The section on decibels in Chapter 1 probably should have been in this chapter. Otherwise, the treatment is good.

Semiconductors, vacuum tubes and power supplies get an adequate treatment in Chapters 4, 5 and 6. The emphasis is, as would be expected, on principles rather than practical construction hints. Again there are many carefully selected diagrams.

Amplifiers and oscillators are dealt with in Chapter 7, although strangely, I thought, oscillators are dealt with before amplifiers. The treatment is clear and concise and well illustrated.

THE NOVICE OPERATORS THEORY HANDBOOK



Covers the entire Novice Theory Course for Australian Amateur Operators

In the next two chapters, Graeme covers transmitters and receivers, using plenty of block diagrams and illustrations and minimal circuit diagrams.

Chapter 10 explains the essence of ionospheric propagation. As Novices can use VHF and UHF now, a paragraph and a diagram or two on tropospheric propagation might have been expected.

The important topic of antennas and transmission lines is discussed in Chapter 11. Whilst it is adequate in coverage, there is a possibility of confusion over what a noise bridge is as this instrument does not get another mention except to say it is required to measure the feed impedance of the antenna. Earlier in the text, reference is made to using an SWR meter and one of the illustrations shows a VSWR meter in circuit.

Chapter 12, Test Equipment and Measurements, describes the use of permanent magnet moving coil instruments as DC ammeters, DC and AC voltmeters and ohmmeters. The use of frequency meters is discussed, but their basic operating principles are omitted. The dip meter scores more than a page to itself. There is a good treatment of the CRO, including its use at audio and RF frequencies for signal analysis.

Chapter 13, for those unlucky enough to have interference, discusses the cause and cure of interference.

The last chapter, 14, gives attention to the important topic of safety. It is a comprehensive treatment and good sound advice is given; however, one cryptic statement deserves elaboration. "PCB's - these are toxic." This is true but what, the novice may well ask, is a PCB? It could be a printed circuit board, for example, and the glossary at the end of the book does not help. I would like to see some additional text explaining that some capacitors and transformers contain oil, some oil contains a chemical known by the letters PCB and contact with this chemical can cause cancer.

Conclusions

Graeme is to be congratulated on his achievement in producing a book which has had such a long and successful life.

Although this is the third edition, some minor editorial matters have slipped by. There is apparently some confusion as to whether or not to use capital letters

■ Book Review

The Novice Operators Theory Study Program

Author: Graeme Scott VK2KE

Reviewed by: Ron Cook VK3AFW

ISBN: 095873660X

Paperback: 298 by 210 mm, 32 pages

RRP: \$10.00

This book is intended to be used with the *Novice Operators Theory Handbook* by the same author. It is the ideal substitute for classes at a local TAFE College, WIA centre or Radio Club.

The book provides the student with a self-paced learning program. In essence, after reading a chapter in the handbook, the student attempts to answer multiple-choice questions from this book.

There are from 10 to 60 of these questions per chapter. After selecting the answers to the questions, the student can check these against the "Master Answers" at the end of the questions section. If the wrong answer was given, then the chapter in the handbook could be reread to clarify that point. Thus the student can obtain rapid feedback on his/her comprehension of the material in the handbook.

Having completed the course, the student will want to know how close to passing the exam they might be. Graeme has thoughtfully included a trial examination at the end of the book. Again the answers are provided on the last page so the student can mark their effort.

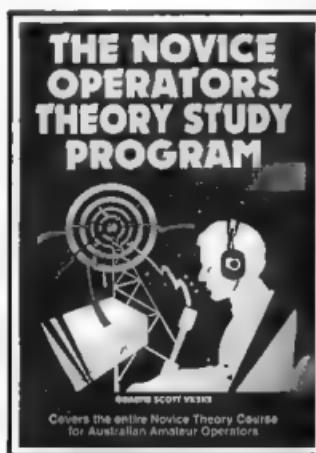
Whilst I did not check the answers given for every question, those that I did check were accurate. The only deficiency found was the omission of a circuit diagram in the trial exam.

I would have liked to have seen more questions on some of the topics, however the salient points seem to have been properly covered.

Conclusions

Strongly recommended for anyone undertaking a study course based on the *Novice Operators Theory Handbook*.

Score: Four and three quarter stars out of five.



Covers the entire Novice Theory Course for Australian Amateur Operators

for megohm, megahertz, kilohertz and kilometre for example. (Lower case applies for measurement units used in mid sentence and spelt in full and the abbreviations use capitals when they represent multiples greater than 1,000 as in MΩ or MHz but lower case is correct for smaller multipliers such as kHz and km). Any text book needs to be carefully checked to eliminate these inconsistencies.

Nevertheless, as I said in the beginning, the deficiencies are minor and I have no hesitation in recommending this book to the reader, either for themselves or as a present to a budding Novice Operator.

Score: Four and a half stars out of five.

■ Operating

What a Weekend!

Christine Taylor VK5CTY
16 Fairmont Avenue
Black Forest SA 5035

The aerials all worked the way they should. We made lots of contacts here and overseas. We heard and saw MIR gliding across the sky. Although the weather was very trying we had a great weekend.

It was the John Moyle Memorial Field Day weekend and we were on a 75 acre (30 hectares) scrub block 22 km from the nearest town.

Nine members of the Adelaide Hills Amateur Radio Society operated the club station VK5BAR using three wire aerials and the club's portable TH3 Jnr beam and mast.

The wire aerials were an inverted Vee for 40 metres, an end-fed Zepp for 80 metres, and a long wire used for 15 metres. The beam was used for 20 metres. We ignored two metres and six metres as we were too far away from the city; and, although we listened, we heard no-one on 10 metres or 160 metres. All contacts were phone.

The inverted Vee was 33 feet per side used with a balun for coax. The cable was dropped down the centre of a length of plastic pipe, which was tied with 'occy straps' to the top of a section of a Hills triangular tower. The tower and the ends of the wire were all tied to trees with ropes. An antenna tuner and a Kenwood TS-820 sitting on a table under the trees (with a beach umbrella to shade the gear, not the operator) were used for 40 metres.

To support one end of the Zepp aerial (with a standard egg insulator and a short length of copper wire to tie it to the pipe) a double length of water pipe was raised upright and tied with tie-wire to a star dropper driven into the ground. The Zepp was 135 feet long and terminated with egg insulators to open-wire ladder line. This end of the Zepp was tied to the top of a convenient post (on the outdoor picture screen already on the scrub block). An antenna tuner in the back of a

van and a Yaesu FT-7 were used for 80 metres after dark.

The long wire used for 15 (and 10) metres is the one regularly carried by the 4 wheel drive vehicle that was this operating station. The far end was pulled up to the top of a 'windlight' tower with a rope carried up there by one of the operators. This station used a Yaesu FT-890 mounted inside the back of the 4 wheel drive vehicle. The operators were protected from the sun by a beach type gazebo.

The AHARS beam had been carried up to the block on the pack-rack of a van, with a cardboard box full of ropes, etc inside the van. The components of the beam and mast are laid out in Photo 1.

Three trapped elements (colour coded and numbered to avoid errors) are ready to be slipped into the clamps on the beam and tightened. There are socket spanners of the appropriate size permanently tied to the beam at either end. These slip into the plastic end caps of the beam so they are protected from the weather but ready to hand when needed.

On the day, all the pieces were spread on the ground and assembled. The only



Photo 1 - The disassembled TH3 Jnr beam and mast.

extra tool needed was a smaller socket spanner or a pair of pliers to tighten the bolts that hold the beta-match wires to either side of the driven element. Now the beam was ready to be bolted onto the mast.

The mast was first extended to its full height (twice the length, as carried) and pinned with the bolts attached. Then the bottom end was placed in the hinged saddle in the middle of the car wheel, which has a bearing inside to carry the weight of the set-up. The car wheel was



Photo 2 - The assembled TH3 Jnr and mast, ready to operate.



Photo 3 - See text.

pegged down with four long tent pegs and the other end of the mast lifted high enough to be able to join on the beam. In this position it sat on the top of a T-bar resting on the ground (Photo 3).

Once the beam was bolted in place, the three guy ropes were tied to the loops on the mast and three people nominated to pull on them when so directed. It did need two or three tall men to push the mast up with the assistance of the rope pullers but it all went up very neatly. When everyone was happy that the mast was vertical, the ropes were tied off to whatever trees were nearest. The coax from the tri-band beam was fed inside a shed where a table was set up for the Yaesu FT-101Z used for 20 metre contacts.

When the beam needs to be turned, it can be manually re-located with a handle mounted just above the rim of the car wheel. In a strong wind this handle can be pegged in place with another tent peg.

The disassembly was just as easily accomplished. This portable mast and beam is a credit to the AHARS members who made up the components a number of years ago. It has been used for Field Days and JOTA ever since. It is a resource that other radio clubs might like to copy.

Most of the operators using the club station callsign either did not yet have any callsigns or did not have full calls. There were three Full Call operators, Geoff VK5TY, John VK5WB and Christine VK5CTY. John VK5KMI had had some HF contacts with his Combined Call but Robert VK5ZHW, Alby VK5TAW and

Tina VK5TMC had had only VHF experience before. Graham and Linden had both passed their Full Call theory but had never before held a microphone.

By the end of the weekend all but Linden had made contacts and even Linden (11 years old) was seen with a microphone in his hand at least once, although he spent most of his time logging for the others and learning to 'hear' those callsigns that can be so difficult to distinguish at first. I am sure that next time he, too, will be brave enough to make a contact.

Murphy had something of a field day, too, this weekend. He did turn on very hot weather. On the Saturday the temperature reached 39°C in the shade though it had only got to 37°C by the end of the contest at 11.30 am local time on Sunday. The operators and loggers were supplied with water all day and, to make them feel

entitled to feel hot, they also had Fahrenheit thermometers in front of them. Once they registered 100°F any more was unimportant, and it provided something to talk about to other operators.

Murphy also got to the equipment. One of the two Yaesu FT-101s just wouldn't receive. A Kenwood TS-520 blew a filter capacitor with a large cloud of white smoke. A set of batteries just didn't have the capacity to run the other FT-101 so that had to run on 240V AC from a generator. One of the cars had a flat tyre and we had more tea drinkers than anticipated so we had to get emergency supplies. Other than that everything went well.

It was great to see and to hear MIR as it passed overhead, and the showers (warm if you wanted them to be) were beautiful. So were the comfortable beds. As it happened, the last person to have a shower realised that all the previous showerers had been under observation. On the shower curtain was a female huntsman spider and 50 or 60 baby huntsmen. They all fell victim to a squirt of insect spray but the remains were left so all could see them next morning.

If it had not been so hot and debilitating during the day I am sure we would have had all-night operations, but the heat had exhausted us all so the beds were welcome.

It is the first time in several years that AHARS has entered the 24-hour section of the John Moyle Field Day and the first time at all for most of the operators. However, despite the problems it was declared by one and all to have been a great weekend.



Graham May operating, Linden supervising and John VK5KMI logging.

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D 3600

Great Value!

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The stunning Yaesu FT-8100R is a state-of-the-art 2m/70cm band mobile transceiver that combines high power and the industry's most versatile memory system with an excellent wideband receiver and solid construction. Its MIL-STD-810 shock vibration rating is your assurance of years of reliable operation. Other features include:

- Rear panel socket for 1200 and 9600 baud packet operation
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- Dual receive capability - VHF/UHF, VHF/VHF, UHF/UHF
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- Enhanced "Smart Search" for auto searching and loading of active frequencies into 50 special memories per band
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- Wide range of tuning steps with different settings for each band
- With handheld microphone, mounting bracket and fused DC power cord

D 3314

2 YEAR WARRANTY



\$899

Specifications

Frequency coverage: Transmit 144 to 148MHz, 430 to 450MHz. Receive 110 to 550MHz, 750 to 1330MHz* (*800MHz cellular locked out)

Transmit power: 2m - 50, 20 and 5W, 70cm - 35, 20 and 5W
Size: 140 x 40 x 152mm without knobs

Rugged HF 5-Band Trap Vertical Antenna

The rugged 5BTM incorporates Hustler's exclusive trap design (25mm solid fiberglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW (PEP) power handling.

Wide-band coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, <2.1 SWR at band edges) with 80 kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can be installed without affecting operation of other bands. High strength aluminum and a 4mm (wall thickness) extra heavy-duty base section guarantees optimum mechanical stability. At just 7.65m, the 5BTM can be ground mounted (with or without radials), although radials are recommended, or it can be mounted in an elevated position with a radial system. Unlike other antenna designs, the 5BTM can be fed with any length of 50 ohm coax cable.

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30m Resonator kit

Adds 30m coverage to the 5BTM and includes all hardware D 4921 \$99.95

BONUS OFFER! Purchase the 30m resonator (D 4921) with 5BTM vertical, pay only half the price for the 30m resonator!



Yupiteru MVT-9000EU Deluxe Scanner

The Yupiteru MVT-9000EU is an amazing new Japanese handheld scanner that provides wide 531kHz to 2039MHz frequency coverage, a large and informative backlit LCD screen and excellent sound quality. All-mode reception capabilities are provided, (FM, W-FM, AM and SSB modes) plus there are 18 selectable step rates between 50kHz and 125kHz to allow the best tuning choice for the signals being listened to. For easy storage of popular frequencies the MVT-9000EU provides 1000 memory channels (20 banks of 50 channels each) which can store frequency, frequency step, reception mode, as well as the Attenuator setting. Selected memory banks can be scanned to check on activity at a rate of up to 30 channels per second. Search operation is provided across 20 bands with 500 Search Pass memories provided to "lock-out" unwanted frequencies for more efficient search operation.

Other features include:

- Built-in ferrite rod for AM broadcast band reception
- A Band Scope function allows checking of adjacent channel activity, with two selectable scope bandwidths. Using the Marker mode you can substitute the centre frequency of the Bandscope with a movable marker, so you can see the frequency and hear the audio of specific adjacent signals
- 10 Priority channels
- 50 Autowrite memories to store active frequencies during search operation
- File editing for Band, Bank and Channel names is provided

Complete with NiCad batteries, AC plugpack charger, car cigarette lighter lead, antenna, carry strap and belt-clip D 2797

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An advanced way to program many of the functions of Yaesu handheld and mobile transceivers. Each package consists of an interface that plugs into the serial port of a PC and connects to the transceiver via its microphone socket (for handhelds) or its Packet socket (for mobiles). Also provides easy-to-use 3.5" (inch) PC software with pull down menus that allow for programming and naming of memory channels, selection of output power, CTCSS tones, scan and battery saver operation, plus much more.

ADMS-1D suits FT-10, 11R, 50R/RD, 51R, VX-IR D 3753

ADMS-2D suits FT-3000M, 8000R, 8500, 8100R D 3759

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FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm Amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-1D software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 580 - 999MHz (cellular blocked)
- FTT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning, and CTCSS encode/decode
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9V battery or adaptor
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character alpha-numeric name
- High speed scanning, 12V DC socket, Digital Code Squelch
- Dual watch allows monitoring of sub-band activity
- Direct FM modulation for better audio quality

- 5 battery saving systems (includes Rx and Tx Save, and Auto Off)
- Rear panel clamshell battery pack
- Comes with FNB-40 slimline 5V 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9826 AC plugpack adaptor for Nicad charging

D 3660 **2 YEAR WARRANTY**



\$569

BONUS OFFER! Pay only half-price for a second Nicad pack when purchased with the FT-50RD.
Limit one per customer. Applies to FNB-40, 41, 42 only.

FT-3000M 70W 2m mobile

An amazing new 2m mobile transceiver with up to 70W RF output. Rock solid with MIL-STD-810C shock and vibration resistance. The FT-3000M also has wide-band receiver coverage (110-180 and 300-520MHz), a dual band or dual in-band receiver facility and 1200/9600 baud Packet socket. Up front it has an impressive backlit alpha-numeric LCD screen. The FT-3000M has a total of 81 memories, as well as a Spectrum Scope mode that allows you to view activity above and below the current operating frequency, or among six programmed memories. A programming menu holds over 50 transceiver settings for easy "set and forget" access, and includes a scrolling text Help Guide. Twin fans provide optimum cooling during long transmissions for greater component reliability. The FT-3000M is supplied with an MH-42A6 hand microphone, DC power lead and instruction manual.



Specifications

\$699

- Frequency range: Tx 144-148MHz, Rx 110-180, 300-520, 800-824, 849-889, 894-999MHz
- RF output: 70, 50, 25, 10W
- Sensitivity: 0.2uV (main Rx), 0.25uV (sub Rx)
- Dimensions: 140 x 40 x 180mm (WHD)
- D 3700



2 YEAR WARRANTY

BONUS!
2m/70cm mobile antenna lead
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■ Operating

The 41st Jamboree-on-the-Air (JOTA)

Harvey Lennon VK7KSM
National JOTA Co-ordinator
PO Box 97
South Hobart TAS 7004

It is time once again for JOTA (Jamboree-on-the Air), the largest annual event on the International Scouting calendar and one of the biggest events for amateur radio each year. The JOTA brings together amateur radio operators with members of the Scout Movement to enable Scouts and Guides around the world to communicate with each other by amateur radio.

How BIG?

In the latest World JOTA Report, the World JOTA Organiser, Richard Middlekoop PA3BAR reported over 510,400 Scouts and 56,100 Guides participated in the 40th JOTA, held in October 1997.

He also reported that almost 21,000 radio amateurs operating over 10,300 stations in some 110 countries made the 40th anniversary JOTA a huge success. Total youth participation around the world was up by about 65,000 or some 13 per cent on the previous year.

Now that is BIG!

Australia was in the top 10 countries participating in the 40th JOTA based on the number recorded as taking part as a proportion of registered members. Official reports indicate that 13,830 Australian Scouts, 6,469 Guides and 3,128 Scout and Guide Leaders took part in JOTA last year and we are hoping for even more in 1998!

Following is a brief introduction for the uninitiated and an update on important details for the 41st JOTA.

JOTA - When is it On and What is It?

JOTA is held on the third full weekend of October each year, this year on 17 to 18 October 1998. Officially it runs from 0000 hours local time on the Saturday to 2400 hours local on the Sunday, but many stations will operate from the Friday night.

JOTA can include the traditional modes such as Morse code and voice and more exotic modes like slow scan and packet. Regardless of the method of communication, the central aim is that Guides and Scouts around the world have the opportunity to exchange views and ideas with other Guides and Scouts, to gain an appreciation of the cultures of other members of the Scouting and

Guiding Movements, and even to establish life-long friendships!

A secondary benefit is an introduction to amateur radio and electronics and technology, more generally. For many, myself included, JOTA provides an introduction to the wonderful hobby of amateur radio.

The nature of JOTA and types of JOTA activities around the world varies greatly, but here are a few ideas from last year for you to consider:

- Scouts in Switzerland operated from a giant tree cabin 20 metres above the ground;
- A handicapped radio amateur in Portugal made contacts by Braille;
- A Group of Rover Scouts in the Netherlands did a form of "progressive" JOTA, being dropped a long way from home, they visited every JOTA station on the return journey;
- In the United Kingdom, the radio team devised a Q-code domino game;
- A keen group in Victoria (Australia) sent a transceiver aloft by balloon power for the 40th JOTA.

The nature of JOTA activities is limited only by your imagination.

Amateur Modes and Frequencies

JOTA is conducted in all authorised amateur radio modes on all authorised amateur radio frequencies. It is advisable for the amateur operator to listen or call on the JOTA call frequencies as listed in Table 1, or alternatively to listen or call just off those frequencies. As is usual practice, once a contact is established, the operator should move off the call frequencies to another available frequency.

National JOTA Address

As for last year the National JOTA Address (also referred to as the Opening Broadcast) will be pre-recorded and tapes will be distributed to stations around the country from which the broadcast will be transmitted simultaneously on a wide range of frequencies to maximise coverage.

The broadcast will be transmitted on Saturday, 17 October 1998 at 0300 UTC, that is one hour earlier than in recent years. Plans are currently under way to broadcast from Canberra using callsign



World Scout Calling Frequencies

Band	CWDX	Phone	VK Phone
80 metres	3.590 MHz	*3.740 MHz	3.590 MHz
40 metres	7.030 MHz	7.090 MHz	7.090 MHz
20 metres	14.070 MHz	14.290 MHz	14.190 MHz
17 metres	18.080 MHz	18.140 MHz	
15 metres	21.140 MHz	21.360 MHz	21.190 MHz
12 metres	24.910 MHz	24.960 MHz	
10 metres	28.190 MHz	28.990 MHz	28.590 MHz

(* - not legal in Australia)

VK1BP on 7.090 MHz, 14.290 MHz and 21.190 MHz; from Perth using VK6SH on 14.190 (beaming east), VK6GGN on 14.125 MHz (beaming north); from Townsville using VK4SPP on 7.085 MHz; and from Hobart using VK7SAN on 3.590 MHz. Local two metre repeaters and WIA broadcast networks will also be transmitting the broadcast in some States.

The Opening Broadcast will once again comprise a series of short addresses including from the Chief Scout of Australia, the Honourable Sir William Deane, AC, KBE, Governor-General of Australia, and the Chief Guide of Australia, the Honourable Lady Deane.

JOTI

For the second year, JOTA will share the third weekend of October with the new International Scouting event, JOTI (Jamboree-on-the-Internet).

More Information and Updates

More information on both JOTA and JOTI can be obtained from:

- the World Bureau's Internet site at www.scout.org/joti/;
- the Scout Australia site, www.scouts.asn.au;
- JOTA Co-ordinators in each Branch through your local Scouts Australia office;
- local WIA broadcasts,
- National Scout Nets conducted by VK7SAN on the first and third Sundays of each month on 14.190 MHz at 0700 UTC and on 21.190 MHz at 0730 UTC;
- alternatively, the author directly by e-mail at harvey_lee@bigpond.com or on mobile 0417 582 587.



The Ingham Group operating JOTA in 1997.



Mackay District active on JOTA last year.

The success of JOTA is dependent on the contribution of amateur radio operators. In his address to the 40th JOTA, the Chief Scout of Australia expressed his thanks to amateur radio operators for their contribution to Scouting and Guiding through JOTA over the past 40 years.

Try to get involved and do amateur radio *and yourself* a favour this October!

WIA Call Book 99
The essential reference book for every radio amateur!

IARU News

Grant Willis VK5ZWI
Federal IARU Liaison Officer
10 Tora Court, Parkholme SA 5043
Tel: 0417 813 861
e-mail: gwillis@doove.net.au

Introduction

At the recent WIA Federal convention, I was nominated and duly elected to the position of IARU Liaison officer for the WIA Federal body. One of the things that I hope to do in this position is to keep the readership informed of the activities of the IARU, as well as enlightening you more as to the role of the IARU in the support of the Amateur and Amateur Satellite Services on an international level.

What is the International Amateur Radio Union (IARU)?

The Amateur Radio Service needs representation at international levels to support its interests in retaining spectrum, plus maintaining and improving licence privileges. Amateur Radio also needs mutual support for activities within the service, to help harmonise activities between different countries. To fill these roles, the International Amateur Radio Union was created many years ago.

The IARU consists of almost all of the national amateur radio societies around the world that have the principal liaison role with

their national regulatory authorities. Further, the IARU is also divided into three regions, which are aligned with the International Telecommunications Union (ITU) region definitions. The WIA is Australia's member IARU society, as in Australia it is the largest organisation in this country charged with representing radio amateurs to the ACA and government authorities. The WIA is also one of the co-founders of IARU Region 3 covering Asia and the Pacific.

What does the IARU Do?

The IARU peak body is the Administrative Council (AC), which is responsible for co-ordinating and defining policies for all member societies to then represent to their respective government administrations.

The IARU-AC receives its input from all member IARU societies and co-ordinates the discussions on the many issues at hand. Then, based on recommendations made at the yearly IARU Region conferences, the AC formulates policies for member societies to take back and promote to their governments.

As well as formulating policies to be put to governments, the IARU is involved in promoting amateur radio, reviewing education issues, promoting amateur activity and assisting, where possible, the development of amateur radio in the many countries of the world. International activities like Amateur Radio Direction Finding are being co-ordinated by IARU, as is the international HF Beacon project (of which VK6RBP is part), amateur satellite international frequency co-ordination, and many others.

How Does IARU Represent Us?

To get an international amateur radio issue to be ratified by the ITU (the international body that governs the use of the radio spectrum) requires the common amateur message to be expressed by a majority of government

authorities present at the World Radio Conferences (WRC, formerly WARC), held every two years or so.

The national societies are not directly admitted to the ITU WRCs. However, they can send delegates along if they are part of the government delegation. In Australia, the WIA sends (and funds) a WIA delegate to attend the WRC as part of the ACA delegation to the ITU WRC, usually held in Geneva, Switzerland.

Through the prior co-ordination of amateur ideas through the IARU, amateur operators and societies admitted to the government delegations can lobby common amateur positions at an international level. This is mandatory when issues such as the international amateur radio regulations are being discussed, and the amateur service as a whole can be affected.

It is the only way that amateur radio can present a common view to the ITU of what the amateur service as a whole would like to see on such an issue. Another similar issue is amateur spectrum issues, where common frequency bands for all amateurs globally are being sought (for example the 7 MHz band). Diagram 1 makes the chain of communications a little clearer.

In the next *IARU News* I will report on some of the recent activities of the IARU, including outcomes from the Beijing 1997 IARU Region 3 conference which the WIA attended, and some current international issues affecting amateur radio.

If you would like more information about IARU, or have an international issue that you would like more information on, or believe the WIA should be doing something about, please feel free to e-mail me or write to me. The IARU work that the WIA undertakes is aimed at improving amateur radio in this country, and your opinions are valuable.

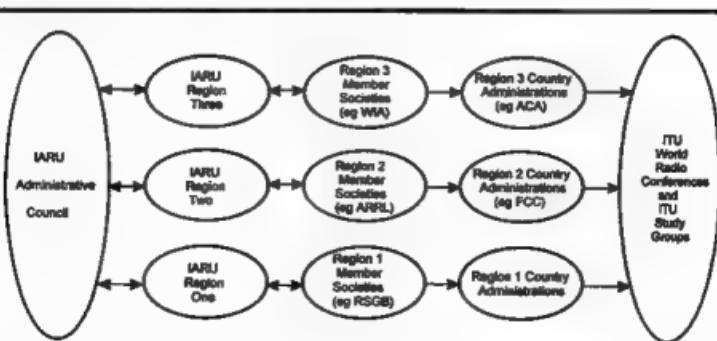


Diagram 1 - The International Amateur Radio and Amateur Satellite Service representation process.

ALARA

Christine Taylor VK5CTY
ALARA Publicity Officer

18 Fairmont Avenue, Black Forest SA 5036

Packet: VK5CTY@VK5TYY

ALARA CONTEST

Don't forget, everyone, November is ALARA Contest month. I am sure all the YLs will remember but we need you OM's as well, and let us have lots of clubs joining in, too.

It is a very friendly Contest! We have time to chat if you have, and the rules have changed this year to allow us to have more than one contact with the same station on the same band as long as we have at least an hour between the contacts. With the limited time the bands are open, some years, this could make quite a difference.

Please join in and PLEASE send in your logs. Make our Contest Manager, Marilyn VK3DMS, do some work this year. All the details of the Contest were listed side-by-side with this column last month. Just warn your rigs up for 14 November at 0001 UTC.

Another SK

Our Secretary received an e-mail message to tell us that Kay GOKTC, Editor of the BYLARA Magazine, became an SK on 22 July.

She will be sadly missed and not easy to replace as Editor. I was personally shocked by this news as I had several conversations (by phone line not radio as we had no HF gear with us) with Kaye while I was in the UK last year. I am even more sorry I did not have the chance to meet her face to face.

Travellers' Tales

Another postcard from Sally VK4SHE tells us she has enjoyed wandering around the ruins in Greece but was back in the UK again. A cousin took Sally and Rex to Brighton to tour the amazing Brighton Pavilion.

Sally remarked on the magnificent chandelier. I remember the enormously long banquet table set with gold plates and cutlery and, on another note entirely, I remember seeing one of the first indoor toilets or water closets, installed for Queen Victoria. If you ever have a chance to visit the Brighton Pavilion, don't miss it.

The image of the exterior Turkish splendour and the Chinese treasures of the interior will stay with you for ever. A pleasure dome to beat all pleasure domes.

By contrast, the postcard from Meg VK5AOV from Broome said the caravan was just 20 metres from the sea at the time of writing but when the tide was out the water was nearly a kilometre away! It is unimaginable. I guess we all have to go there to see it for ourselves.

Helene VK7HD and Peter are moving around the northern parts of VK4 and Marlene VK3WQ and Jim are in Hervey Bay. So, if you hear any of these visitors to your area, say "Hello" to them.

Why not listen to the Travellers' Net from time to time to see who is where; it is very interesting.

Historical Items

Two very interesting pieces of paper have come my way recently, both concerning early YLs.

The first one refers to a YL in Britain back in 1927. In the log book belonging to a Miss Barbara Dunn, who received her licence on 1 Sept 1927 as 6YL, later G6YL, are recorded many interesting and historic contacts and 'stations heard'. Barbara wasn't the first YL licensee in the UK (that honour goes to a Mrs C E Ingham (1XL), granted in 1913), but Barbara has certainly left us some amazing records. As an SWL she heard a special program sent out from the Marconi Drummondville Beam Station in Quebec, to commemorate the Diamond Jubilee of their Confederation on 2 July 1927. She made contacts with yachts and passenger ships, and often monitored radio signals between aircraft and ground stations.

For Australians, the most interesting report Barbara recorded (her reports are verbatim and cover both sides of the conversations so she was obviously as proficient at shorthand as she was at CW) were those between Kingsford Smith in the 'Southern Cross' on the flight from Ireland to New York in June 1930 and various ships at sea and land stations. Her 30 hour vigil at the radio on this occasion was written up in the *Daily Express*; it certainly was a remarkable effort.

Barbara's first VK contacts were with a maritime station. She had a series of contacts with G5WQ in November/December 1931, on the Blue Funnel ship 'Ascanius' between Las Palmas and Australia. One of these was in VK6, off Cape Leeuwin; another was in VK5 as the ship crossed the Great Australian Bight.

She continued to operate for 50 years. By 1930, when Barbara became the first YL to win an RSGB Trophy, she had made over 2000 contacts, and before she shut her key

down she had made over 15,000 QSOs all on CW.

All the information I used about Barbara was from an article in a radio magazine printed back in 1980. I have far less information about the next early YL but would love to have more. So, if the following small piece triggers a memory for you, please put pen to paper immediately before it is forgotten again.

Dave VK6ATE sent this next piece to Bev VK6DE some time ago about 'Ladies in Amateur Radio (Western Australian style)' which mentions an application was received, in April 1914, from a Mrs Pym of Rottnest Island to become a Correspondence Member of the WA Radio Club.

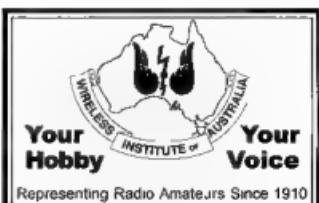
Was she the first ever VK YL? By October 1923 the callsign 6AW was held by an L Pym of Rottnest Island but there the mystery remains!

From the rest of the reference it would appear that there was a Lyle Pym who held a licence. This may be the lady's husband but, if so, why did she apply in her own name to become a member-at-a-distance?

Also in the same October 1923 list appears a Miss C Stevens of the District High School of Bunbury. She seems to have held a "Receive Only" licence 6BF, which is odd in itself as the first broadcast station 6WF did not come on the air until June 1924. We don't know if Miss Stevens ever held a transmitting licence, or whether she was a pupil or a teacher.

In the Minutes of the WA Radio Club there are two other mysterious references, one an inquiry from a Miss A (Gypsy) Jones asking how to join the club, and there is a reference to "another application" from a Miss Faraday. But no more references to any of these ladies have been found.

The first complete record we have is that for Miss Ruth Longley who became the first holder of VK6YL, possibly early in 1936. Ruth is listed as Mrs Harris in the 1946 Call Book but was not listed at all in the 1947 Call Book. By then there were several YL Operators in VK6 of whom the best known and most active was probably Mrs Bobby Hill VK6MH. If anyone can cast any light on any of these mysteries, ALARA would be very grateful.



Pounding Brass

Stephen P Smith VK2SPS
PO Box 381 Mona Vale NSW 2103

The intended article on "Using Morse in a Mobile Environment" will appear in a later issue. Unfortunately, my photographs didn't turn out as well as I had hoped.

This month's column will include a mixed basket of items collected from around the world.

Morsum Magnificat

Morsum Magnificat, the international Morse magazine from the UK, has a new editor publisher, Zyg Nilski G3OKD. Zyg will take over from Geoff G3GSR and Tony G4FAI at the end of this year.

This is great news for Morse enthusiasts around the world as it would have been a great loss to see MM close its doors after many years of dedicated work. Well done, Zyg. You have a hard act to follow.

Any related information can be sent to: Zyg Nilski G3OKD, The Poplars, Wistanswick, Market Drayton, Shropshire, TF9 2BA England.

High Speed Telegraphy Championships

The HST (High Speed Telegraphy) Championships 1999 will take place in Pordenone, Italy starting on 28 April and finishing on 2 May 1999.

During the event other activities will take place, including excursions to Venice and the Electronic and Ham Radio Fair. Further information can be obtained from HST Coordinator, Lazlo Weisz HA3NU, PO Box 169, H-7100, Szekszard, Hungary.

Morse Teaching Program

The "MILL", a Morse teaching program by Jim Famer W4FOK, is now available as freeware. Anyone with Internet access can download this fine program from Jim's Web site at <http://www.net-magic.net/users/w4fok/> and register by e-mail.

The program contains international and American Morse, along with other related items highly recommended.

Education Notes

Brenda M Edmonds VK3KT
PO Box 445, Blackburn VIC 3130

As was noted in the last issue of *Amateur Radio*, new Regulations examination papers have now been put into use. As these contain questions from the new question bank which have not been used before, many invigilators will feel that the papers they are now receiving are harder than the previous ones.

Please be assured that care was taken to maintain the standards set previously. New questions always seem harder than ones which we have seen many times. As you see more of them, I am sure you will be pleased with the standard.

Of course, if anyone finds a fault that has slipped through both the Exam Committee and the ACA, please let me know.

The Examination Committee intends to begin to draw the Theory papers from the new question banks shortly. You will be advised when this occurs. Again, the papers will appear harder as new questions are used.

I often receive letters from newcomers to the hobby asking about classes or study needs. Some I can answer directly, others I pass to

New Books

Two new books about telegraphy are now on the market.

Morse Code: Breaking the Barrier by David Finley NIIRZ is a book based on the research by Ludwig Koch, a German psychologist, who is believed to have trained students to copy 12 wpm in as little as 12 hours. Other chapters include, Making Your First QSO, Sending With Keyers, Straight Keys, and Bugs, plus other Morse related subjects.

The book (MFJ-3400) is available for \$US14.95 plus shipping from MFJ Enterprises Inc, PO Box 494, Mississippi, MS 39762, USA. The author's Web site can be found at <http://www.sdc.org/finley>. I hope to receive my copy soon.

The other book which should interest telegraph collectors is by the noted collector

more appropriate respondents. I was disturbed recently to hear from a student that he had attended a local club meeting in hope of mixing with and talking to older amateurs, and had found the atmosphere quite unwelcoming.

I appeal to all clubs and gatherings, hamfests, fox-hunts and even on-air net to be aware of the newcomers, make them welcome, offer them the courtesy of listening to them, and answer questions or pass them to someone else who can answer. The impression made on a new recruit may well be the factor that decides if he/she will continue in the hobby, or perhaps bring others in.

Another letter recently received was from a student in Papua New Guinea, seeking to meet amateur radio operators as pen friends, to discuss equipment, resources and radio theory while he is studying for his licence. If any readers would like to make him welcome, his address is: Mr Ricky Nadu, PO Box 649, Popondetta, Northern Province, Papua New Guinea. I am sure he will welcome any responses.

Our membership has dropped alarmingly over recent years. We need to put aside the whinges, complaints and politics in order to sell the WIA to current members as well as newcomers.

Do YOU know what your Division and/or the WIA Federal body do in your interests?

In general, the strongest critics of the WIA are non-members. Can you refute their criticisms and demonstrate the need for a coherent approach and support for the WIA? The WIA speaks for the Australian amateurs at local, national and international level. To do so, it requires input and support from all amateurs.

Tom Perera W1TP. The book is entitled *Perera's Telegraph Collectors Guide*.

The book identifies keys, sounders, relays and other Morse related instruments along with 250 pictures and descriptions. The book also includes a current value guide to keys, etc. A must for every telegraph instrument collector.

The book is in soft cover, 5.5 x 8.5 inches, contains 80 pages and costs \$US10.00 plus \$US5.00 airmail. This book can be purchased from: Artifax Books, Box 88, Maynard MA 01754, USA.

To Come

Coming articles include Gravity and Leclanche cells as used in overland telegraphy, galvanometers, and electrical tests required in practical telegraphy.

Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monash Street, Manton VIC 3194
E-mail: vk3did@hotmail.com

An Apology

I acknowledge receipt of advice that in the VHF-UHF Field Day Results (*Amateur Radio June 1998*) an error was made in a callsign. In Section B - Portable, single operator, 6 hours, a wrong callsign was printed as the winner. The correct winner is Steve Hutcheon VK4ZSH and I express my sincere apology to him for my typing error and for the distress caused to him by this.

Thanks this month to G3PJT, VK3KWA, VK4EMM, VK4NEF, OH2KI, and *RadCom*

Results of Pacific 160 Metres Contest 1998

(posn\call\score)

CW

		Phone										
1	VK6VZ	952 *	1	VK5CRS	1554 *							
2	ZL2SQ	946 *	2	VK3EW	1245 *							
3	VK3IO	792 *	3	VK3IO	940							
4	VK3APN	264	4	VK3ZL	658							
5	VK2AYD	208 *	5	ZLIBRY	639 *							
6	W8JL	180 *	6	ZL2AS	480 *							
7	VK3DID	126	7	ZLIBWQ	344							
8	VE7BS	100 *	8	ZL3TX	196 *							
9	VK4ICU	72 *	9	VE7BS	60 *							
10	YCOLOW	45 *	10	VK3APN	24							
11	VK3ZL	44	11	VK3DID	21							
12	W7LR	40 *	12	VK6VZ	16							
13	K6SE	10										
14	N6RO	5										

* = certificate

A total of 26 logs was received this year, nine of them by e-mail. Some scores had to be altered upwards, as several logs forgot to add the extra multiplier for additional DXCC countries. Activity was brisk at the beginning in CW mode, with SSB emerging later in the day. Most of the ZL/VK activity was up to midnight local time. Many thanks to all those who took part. See you next year.

Results of John Moyle Field Day 1998

From Eric Fittoch VK4NEF
(Call\cat\mode\band\score)

Portable, Six Hour

VK2BOR	Mult	All	All	264 *		
VK3CMZ	Mult	All	All	118 *		

Contest Calendar October - December 1998

Oct 3/4	VK/ZL/Oceania DX Contest (Phone)						(Aug 98)			
Oct 4	RSGB 21/28 MHz Contest (Phone)						(Sep 98)			
Oct 10/11	VK/ZL/Oceania DX Contest (CW)						(Aug 98)			
Oct 17	Asia-Pacific Sprint (CW)						(Jan 98)			
Oct 17/18	JARTS WW RTTY Contest									
Oct 17/18	Worked All Germany (Mixed)						(Sep 98)			
Oct 18	RSGB 21/28 MHz Contest (CW)						(Sep 98)			
Oct 24/25	CQ WW DX Contest (Phone)						(Sep 98)			
Nov 1-7	HA QRP Contest						(Oct 98)			
Nov 7/8	WAE RTTY DX Contest						(Jul 98)			
Nov 7/8	OK DX CW Contest									
Nov 14	ALARA Contest (CW/Phone)						(Sep 98)			
Nov 14/15	IARU Region 1 160 m Contest									
Nov 14/15	All Austria CW Contest									
Nov 21/22	CW WW DX CW Contest									
Dec 5/6	ARRL 160 m Contest									
Dec 12/13	ARRL 10 m Contest									
Dec 27 to										
Jan 25	Ross Hull VHF/UHF Contest									
Dec 31	ARRL Straight Key Night									

VK7OTC Mult All HF 122 *

VK3PP Sngl All HF 60 *

VK4EMM Sngl CW HF 466 #*

VK1PK Sngl CW HF 26 *

VK5AJ5 Sngl Phone HF 192 *

VK5UE Sngl Phone HF 104 *

VK1PK Sngl Phone HF 60 *

VK4MC Sngl Phone HF 14

VK3KA1 Sngl Phone VHF 742 *

VK2ANK Sngl Phone VHF 148 *

VK5AJM Sngl Phone VHF 138

Portable, 24 Hour

VK3FRC Mult All All 15672 *

VK3ER Mult All All 10212 *

VK4WIS Mult All All 6088 *

VK3SAA Mult All All 5964

VK3APC Mult All All 5482

VK3CAT Mult All All 4888

VK2FRE Mult All All 4244

VK4IZ Mult All All 2730

VK4WIP Mult All All 2640

V16EW Mult All All 2590

VK4BAR Mult All All 1838

VK5ARC Mult All All 1620

VK2LO Mult All All 1210

VK5GRC Mult All All 754

VK6ANC Mult All All 646

VK4CHB Mult All HF 290 *

VK5BAR Mult All HF 240 *

VK4WIT Mult All HF 206

VK4WIE Mult All VHF 5850 *

VK4EV Sngl All HF 134 *

VK6AR Sngl Phone All 124 *

VK2WF Sngl Phone HF 140 *

VK3TBM Sngl Phone VHF 3950 *

VK4IS Sngl Phone VHF 794 *

Home

VK1FF Sngl All HF 490 *

ZL2AWH Sngl All HF 234 *

VK4DO Sngl All HF 119

5* VK2BJ 6669

2* VK2APK 4099

6* VK4EMM 6513

6* VK8AV 3595

16 VK2AYD 4514

8* VK4NM 2976

19* VK6VZ 4084

13* VK3APN 2604

20* VK1FF 4010

15 VK4TT 2477

29* VK3ZC 2808

18* VK8HA/M5 2151

34* VK5GZ 2690

20 VK2BQQ 2006

36 VK6AJ 2470

32 VK3IY 836

43 VK3CM 2113

HQ Station

44 VK2DID 2028

2 V14WIA 4608

(VK4XA)

56 VK6PG 1853

57 VK3MR 1824

58 VK3XB 1799

Check log VK4AJH

64 VK2VM 1629

74 VK5HO 1056

78 VK3KS 901

85 VK3AMD 398

Full list available on Internet or from me.

HA-QRP 80 m Contest (CW)

0000z 1 November to 2400z 7 November
 This international contest takes place each year during the first seven days of November and is open only to stations running a maximum of 10 W input power. Use 3560-3600 kHz, CW only.

Call "CQ TEST QRP" and exchange RST, QTH and names. Score one point per QSO with own country and two points per QSO with others. Stations can be contacted only once during the contest for points credit. Final score equals QSO points times DXCC countries worked. Logs must show date, time, callsign, reports, QTH and name of station worked.

Summary sheet must include first name and QTH sent during the contest, Tx input power and Tx output device.

Send logs postmarked by 20 November, to: Radioteknika Szerkesztősege, Budapest, Pf 603, H-1374, Hungary. All entrants will receive participatory certificates and outstanding scorers will receive a free subscription to *Radioteknika* magazine for one year.

High Speed Club CW Contest

0900z - 1100z and 1500z - 1700z,

Sunday 1 November

This contest runs on the first Sunday of November each year, and is sponsored by the High Speed CW Club of Germany.

Use 80 - 10 m (no WARC). Exchange RST plus serial number. HSC members will send their HSC membership number. Score one point per QSO with own continent and three per QSO with other continents. The multiplier is the total number of DXCC countries worked separately on each band. Note that stations can be worked once per band per period.

Closing date for logs is 11 December 1998. Send logs to: Frank Steinke DL8WAA, Trachenbergerstrasse 49, D-01129 Dresden, Germany.

OK DX CW Contest

7/8 November, 1200z Sat - 1200z Sun

This CW contest runs in the second full weekend of November each year. Bands are 160 - 10 m. Categories are: single operator, single and multi-band; multi-operator, single and multi-Tx; QRP, single and multi-band (max 5 W o/p); SWL. Single operator stations operate max 20 hours, with minimum one hour rest periods. Multi-band stations apply "10 minute band change rule" (multi-Tx stations are exempt from this rule).

Send RST plus serial number; OK stations will send RST plus three-letter district code. DX (VK) stations score 10 points per OK/OLOM QSO, and one point per QSO with another country. Multipliers are the sum of

DXCC countries and OK districts on each band. Final score is QSO points (all bands) times multiplier from all bands.

Note rest periods in log and use a separate log for each band. Cross-check sheets are required for 200+ QSOs. Logs can also be submitted in ASCII on DOS disc. Entries should be postmarked by 14 December and sent to: CSRK, Box 69, 113 27 Praha 1, Czech Republic.

IARU Region 1 160 m CW Contest

14/15 November, 1400z Sat - 0800z Sun

Scheduled for the third full weekend of November each year, everyone can work everyone, including stations in their own country, in CW mode.

Exchange RST + two- or three-letter district code (for VK = state or territory). Score one point per QSO and multiply by the number of different location codes worked PLUS the number of DXCC/WAE countries worked.

Send your log to: ARI Contest Manager I2UIY, PO Box 14, I-27043 Broni (PV), Italy, postmarked by 30 December. SWL entries also welcome.

Spring VHF-UHF Field Day

John Martin VK3KWA, Contest Manager

Some months ago Rod Collman VK2TWR suggested that there should be a VHF-UHF Field Day in the springtime. There seems to be plenty of interest in the idea, certainly enough to justify running it as a trial. If it is a success, it could become a regular event in the contest calendar.

So, this year, there will be a Spring VHF-UHF Field Day on the weekend of November 14 and 15. It will be an ideal time to dust off that equipment, blow the earwigs out of your portable antennas, and spend a nice warm spring day on a hilltop.

The rules will be much the same as for the regular VHF-UHF Field Day which is held in January. Any comments on the rules or timing of this new Field Day would be most welcome.

Duration

VK6 only: 0400 UTC Saturday, 14 November to 0400 UTC Sunday, 15 November 1998. All other call areas: 0200 UTC Saturday to 0200 UTC Sunday.

Sections and Awards

A: Portable station, single operator, 24 hours.

B: Portable station, single operator, any 6 consecutive hours.

C: Portable station, multiple operator, 24 hours.

D: Home station, 24 hours.

General Rules

Operation may be from any location, or from more than one location. You may work

stations within your own locator square. Repeater, satellite and cross-band contacts are not allowed. A station is portable only if its equipment, including antennas, is transported to a location other than the normal home location of its operator.

No contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for any contest activity. Suggested procedure is to call on 150 on each band, and QSY up.

One callsign per station. If two operators set up a joint station, they may enter as a multi-operator station under a single callsign, or as separate single operator stations. Stations with more than two operators must enter section C.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator.

Repeat Contacts

Stations may be worked again on each band after three hours. If the station is moved to a new locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Scoring

For each band, score 10 points for each square in which your station operates, plus 10 points for each locator square worked, plus one point per contact. Multiply the total by the band multiplier as follows: 6 m x 1; 2 m x 4; 70 cm x 7; 23 cm x 10; 13 cm x 13; and Higher x 16. Then total the scores for all bands.

Sample Scoring Table

Band	QSO pts	Locator pts	Multiplier	Total
6 m	120	+ 280	x 4	= 1600
2 m	60	+ 140	x 7	= 1400
etc				
Overall Total				3000

Logs

For each contact: UTC time, frequency, station worked, serial numbers and locator numbers exchanged, points claimed.

The front sheet should contain names and callsigns of all operators; postal address, station location and Maidenhead locator; the section entered; a scoring table; and a signed declaration that the Contest Manager's decision will be accepted as final.

Entries

Please post logs to the Manager, Spring VHF-UHF Field Day, PO Box 2175, Caulfield Junction, VIC 3161. Logs must be received by Tuesday, 1 December, 1998. Early logs would be appreciated.

How's DX?

Stephen Pall VK2PS
PO Box 83, Dural NSW 2158

Direct QSLing, it appears, is a problem for many DXers, especially for the beginners. Lecture and study courses prepare the beginner to pass the examination to obtain a licence, but I wonder whether the candidates are conversant with the practical operation of an amateur radio station. Whether they have the experience of the "hands on approach" of amateur radio, or whether they are knowledgeable in QSLing, especially how to QSL direct.

QSLing via the Bureau system seems to be an accepted fact (despite it being a very, very slow process), but one has to be mindful that at least fifty DXCC countries do not have a QSL Bureau at all! A card casually sent via the Bureau system to one of those countries will never reach its destination.

Many countries, like Egypt, France, Germany, Japan, Monaco, Morocco and Portugal restrict forwarding of QSL cards to members only. On the other hand many amateurs, including DXers, are not members of the Bureau system or their national amateur association.

The golden rule in direct QSLing is to follow the instructions of the DX station. Even in a pile up, if you listen long enough the DX station will eventually give QSLing instructions. If the instruction is to send the card to a QSL manager, do that. If the card is to be sent direct to the home call, do that also. Never assume that the QSL manager is a member of the bureau.

To be successful at direct QSLing you must follow certain rules. You have to realise that the DX station does not really need your card. It is you, the beginner DXer, who wants his card. You want the card, and expect the DX station to pay for the reply envelope and postage? It does not work that way!

You might be one of the many hundreds, or even thousands, of amateurs who want that DX card. Just add up the costs! Your card is required by the DX station to supply the information about your contact, to assist the DX station to find you in their log, and to issue a confirming card.

The cost of getting a card from the DX station is borne by you. When sending a card to the DX station, please include a self addressed air-mail envelope with adequate compensation for the reply. This problem is solved by enclosing one or more IRCs (International Reply Coupons) which can be purchased from your post office.

Make sure that the left side of the Coupon is date-stamped by the issuing post office. Generally one IRC will be adequate for an air mail reply, but certain countries require more than one IRC. Some other countries, who are not members of the International Postal Union, do not accept IRCs at all.

The other method of paying for the return postage is to send "green stamps", that is US one dollar bills (purchased from banks or money exchanges). Be warned, however. Some countries have currency restrictions and individual citizens are not permitted to receive foreign currency by mail.

On the other hand, due to exchange rate fluctuations, one green stamp might not be sufficient to purchase a reply stamp to Australia. A good example is Germany where it costs two US dollars to buy a stamp on a letter to be sent to Australia.

As you can see there are problems, even with direct QSLing, not to mention the inconvenience of the "disappearance" of foreign letters in the mailing system of underdeveloped countries or in countries which are undergoing a continuing financial crisis and rapid inflation or devaluation.

The matter of direct QSLing is much simpler if the QSL Manager of your DX station is a local one residing in Australia. You have to put only a 45c stamp on the reply envelope. Some of you apparently ignore even this simple courtesy.

An Australian DXer, who recently operated in the Pacific, received hundreds of card requests, including quite a number of cards from Australian amateurs. More than half of the Australians sent only the card, nothing else. I know that our DXer replied to all cards where a self-addressed stamped reply envelope was included.

Bhutan A5

Jim Smith VK9NS, who has visited Bhutan previously, issued a press release in the name of HIDXA on 9 August indicating a possible activity from Bhutan late in October.

Here are the vital parts of the release. *"Having been in contact with Bhutan on several occasions in recent weeks, I am making plans to return to A5 Bhutan in the near future."*

Depending on availability of funds, either one or two weeks will be spent in Bhutan. Due to previous commitments the earliest time-frame for my visit is the last two weeks of October."

These are the major points of Jim's plan:

1. Return to Bhutan to gather together the equipment including transceivers, linear amplifier, RTTY gear, all cables, microphones, and the beam donated by INDEXA shipped to Bhutan by HIDXA, etc.

2. Check the serviceability, assess condition of all equipment, and familiarise MOC (Ministry of Communications) staff with its condition.

3. In Bhutan, legislation is now being processed in the form of a Telecom Act, which will permit introduction of amateur radio as a hobby. Finalise an assessment and establish further needs to assist the Kingdom of Bhutan to make its entry into the world of Amateur Radio.



The participants in the Laos - XW DXpedition. (l to r) Frank AH0W, Eric SM0AGD, John SM0EJZ, Yuki (XYL of JH1AJT), "Zorro" JH1AJT.

4. To assist a very well known Bhutanese to set up an amateur radio station so that activity can commence as soon as legislation is in place. It is unreasonable to expect the first official Bhutanese activity to be carried out by a DXpedition completely disregarding the local nationals. The participation by Bhutanese operators is very important on such an occasion.

5. Discussions with MOC staff about the number of operators on start-up, including foreign and national participation.

Jim has been promised that a visa will be issued within seven days of his application being received in Bhutan. The bad news is that costs in Bhutan are high and during October are \$US240 per day. This cost has to be covered. Initially, seven days would be good, but 10 or 14 days would be better, giving much more flexibility. In addition, there is the cost of travel to and from Bhutan, etc.

Jim appealed to individual DXers, Clubs, Groups and Associations to make or pledge donations and to provide written support for the proposed Bhutan activity. The deadline for final decision making was 20 September.

If you need Bhutan, please send your donation, and encouraging note (Australian cheques are accepted), marked Bhutan Project, to Jim Smith VK9NS, PO Box 90, Norfolk Island 2899.

Temotu Province - H40 - Added to DXCC List

The ARRL Awards Committee, in a press release dated 17 August, announced that it has accepted a recommendation of the ARRL DX Advisory Committee to add the Temotu Province of the Solomon Islands to the

DXCC list. The addition will be effective with contacts made as from 2359 UTC on 31 March 1998 and after.

The DXCC Desk will accept QSL cards for Temotu Province (H40) beginning 1 October 1998. QSL cards received before that time will be returned without action.

Temotu Province includes the Santa Cruz, Reef, Duff and Vanikolo Island groups. They are located more than 350 kilometres from the main group of the Solomon Islands.

The FOO Austral and Marquesas Islands are still under review by the DXAC. They are waiting on more detailed maps of the area before making a final recommendation on those entities.

Amsterdam Islands - FT5Z

The planning for the FT5ZH DXpedition to Amsterdam Islands between 28 November and 24 December is now at an advanced stage. Mehdi F5PFP and Eric F5SIH will be active with two stations equipped with FT920s, kW amplifiers, 3 element 20 m Yagis, 4 element tri-band 10, 15 and 20 m beams, and a Titanex vertical for 40, 80 and 160 m.

They are still looking for a WARC antenna. QSL via F6KDF.

Pratas Island - BV9P

During the recent New Orleans International DX Convention, Paul BV4FH, who was a member of the last trip to Pratas Island, explained how difficult it is to obtain proper authorisation for returning to this politically sensitive island.

Paul asked those present, and other DXers, to indicate their need for Pratas Island to be activated. He hopes to present the e-mail

messages as hard copies in a package to show evidence of the needs and desires of the DX community to the governing authorities.

He feels that good representation will be the culminating ingredient for the approval so that a 10 member team can visit the island as soon as possible. Paul's e-mail address is bv4fh@ms.hinet.net.

Rodriguez Islands - 3B9

Frank Smith AH0W announced at the New Orleans International DX Convention that there will be a major multi-multi activity from Rodriguez Islands, probably in January 1999.

It will be conducted by an international team of operators from the US, Japan and Europe. They plan to use four HF stations from two locations separated by about five miles to minimise interference.

Yemen - 70

The Yemeni Minister of Communication, Mr Ahmed Al-Ri, recently visited the Royal Omani Amateur Radio Society and had a series of meetings with the officials to help establish amateur radio in Yemen and a possible DXpedition from Socotra Island (12° 30' N and 54° 00' E). It was reported that the minister is keen on amateur radio (including CW) and was himself a radio amateur some 40 years ago.

It appears that the island is about 370 km from its nearest parent country (Yemen) and it belongs to another continent, namely Africa. The island is avoided by mariners because piracy is abundant in that area.

"It could become a new DXCC entity," said Tony A45ZN, commenting on the news. However, we should keep in mind what the Deputy Minister of Communication of Yemen said to Zoli HA5PP in June this year (see August 1998 *Amateur Radio*).

Future DX Activity

* **Belgium - ON.** Special event station ON4CLM will be on the air from 30 October until 7 November 1998 celebrating the liberation of the Belgian town of Knokke by the Canadian Forces in 1944. QSL via the Bureau or direct to PO Box 110, B-8300, Knokke-Heist, Belgium.

* **Maldive - 8Q.** A sixteen member German team will be active from 19 October to 4 November during the CQ WW SSB DX Contest. The OM's will use the call 8Q7IO and the (X)YLs will use the call 8Q7IQ. QSL via DL7VRO.

* **United Arab Emirates - A6.** Daniel F6ARU (who operated from Jordan as JY9RU) will be active from here for one year

* **Pacific Trip.** Roger KF8OY will be operating as ZK1OOY from South Cook, as YJ1OY from Vanuatu, as S79OY from the Seychelles, and from the Philippines and



Zorro JH1AJT at the microphone of XW30, XW30A and XW4A.

Singapore from 22 October to 9 November. QSL direct only via KF8OY.

* India - VU3. Gerard F6EGX will be active from India as VU3AGX.

* Vietnam - 3W. Peter 3WEA is restricted to operation only on the following frequencies: 14160, 14260 and 21260 kHz. He was heard around 1500-1630 UTC. QSL goes to PO Box 121, Ho Chi Minh City, Vietnam.

* Kenya - 5Z4. Jacky, formerly F2CW, now a resident Kiwi as ZL3CW, will be active from Kenya 5Z4, from Uganda 5X, and from Eritrea E3 in the next four months. QSL to home call, ZL3CW, Jacky Calvo, PO Box 539, Pukekohe 1800, New Zealand.

* The Gambia - C56. Six members of the Bavarian Contest Club will be very active in the forthcoming CQ WW SSB Contest from 14 October. All bands CW and SSB.

* Martinique - FM. Nuria and Josep will be active as FM/EA3ACK/p and FM/EASBT/p on SSB, RTTY and some CW, on 80-10 m, including the WARC bands, from 20 to 26 October. All QSLs go via EA3BT.

* Guam - KH2. Gus K4SXT/KH2 and Dave N2NL/KH2 are now both active on 160 metres. QSL to N2NL/KH2 via W2YC.

* VK/ZL/Oceania Contest. The SSB part of this contest will be on 3/4 October and the CW section will be on 10/11 October. Seven stations from Guam and six stations from Saipan will take part. As a DXer you should take part, not only to show solidarity with the fraternity, but this is the occasion where you might be able to pick up a few rare countries from the opposite side of the globe.

* Mall - TZ. Bob K4RB has just received his TZ6DX licence. He will be active from 40 to 10 metres, including the WARC bands. He is active usually at his local evening time. QSL to the old callsign, WA4FVT.

* South Africa - ZS. Etienne ZS6Y will be active during the October CQ WW contest with the ZS9F prefix.

Interesting QSOs and QSL Information

* ZS80NRM - 14260 - SSB - 0555 - July. QSL via ZS6Y, ESwart, PO Box 12, Strubens Valley, 1735 South Africa.

* ZC4ESB - Mac - 14243 - SSB - 0533 - Aug. QSL via Box 96, Larnaca, Cyprus.

* TA2DS - Setm - 14164 - SSB - 0540 - Aug. QSL via WA3HUP, Mary Crider, 2485 Lewisberry Road, Yorkhaven, PA-17370 USA.

* ZPSDCB - Dan - 14206 - SSB - 0523 - Aug. QSL via the Bureau.

* OA4CPY - Julio - 14195 - SSB - 0636 - Aug. QSL via Box 538, Luma, Peru, South America.

* ZK1SCQ - 14257 - SSB - 0531 - Aug. QSL via DL6DK via the Bureau.

* T99A - Mehmed - 14200 - SSB - 0623 - Aug. QSL via Mehmed Cosovic, Osma Ulica 4, Visoko, Bosnia & Herzegovina, Europe.

* YIIHK - Haidar - 14243 - SSB - 0631 - Aug. QSL via KK3KS, Jacobus J Berrevoets, 160 Valley Road, Windsor, PA 17366 USA.

* HK3JJA/J0 - Pedro - 14260 - SSB - 0731 - Aug. QSL via HK3JJH, Pedro J Allina, Box 81119 Bogota, Colombia, South America.

* H44NC - Norried - 14252 - SSB - 0602 - Aug. QSL via Norried Chaisson, PO Box 168, Munda, New Georgia, Western Province, Solomon Islands.

* 9Y4GR - Greg - 14005 - CW - 1120 - Aug. QSL via 9Y4GR, Gregory Redon, 8 Henry Pierre St, Saint James, Port of Spain, Trinidad, South America.

* S07WW - Mark - 10101 - CW - 0634 - Aug. QSL via ON5NT, Ghis Penny, Lindesstraat 46, B-9880, Aalter OV, Belgium.

From Here There and Every Where

* Brazil - ZW4SM was on the air from 4 to 6 September as a special event station celebrating the 176th Anniversary of Brazilian Independence. QSL via the Bureau or via PY4SM, PO Box 120, Belo Horizonte, MG - 30, 123 - 970, Brazil.

* Rotuma - 3D2. 3D2DX was active until the middle of September. QSL via EA4CP, Jose Diaz, Doce de Octubre #4, 28009, Madrid, Spain.

* Indonesia - YB. Ahmad YB4JIM reported that the Indonesian postal system will now take one IRC to cover full postage to another country. No green stamps please.

* Algeria - 7X. Med 7X4AN advises that his new and only direct QSL address is: Boukraoui Mohamed, PO Box 30133, Barcelona 08080, Spain.

* Albania - ZA. A number of Albanian amateurs were active from Sazan Island early in September using the callsign ZA0IS. QSL via Arben Goxhaj ZA1K, Box 1, Westbrook, MN-56183, USA.

* Vietnam - 3W. Mirek VK3DXI was active from 29 August to 4 September from Ho Chi Minh City (Saigon). QSL only via DL4DBR.

* Singapore - 9V1. The new work assignment for Mirek VK3DXI will be in Singapore for the next few years. He hopes to activate his old callsign again, 9V1XE. QSL via DL4DBR.

* Kerguelen Islands - FT5X. Helios F6IHV, who was active as FT5XN, left the island on 28 August.

* Falkland Islands - VP8. Jan K4QD will operate as VP8CRB from the Falkland Islands for three weeks from 26 December to 16 January. QSL via Jan Heise, K4QD, 614 Dundee Circle, West Melbourne, Florida 32904, USA.

* USA County Hunters. The Down Under County Hunters Net has moved to 14336 kHz at 0330 UTC.

* QSL Information. Bill Yoreo K1WY (Box 2644, Hartford, CT 06146-2644, USA) is the QSL Manager for ET3BT, GI6YM, TF8GX, TF7GX, UA0DC, UA0ZBK and UA0ZBK/0

* Vietnam QSL Information. If you still need a QSL for a contact with XV7SW the only valid route is now via his QSL Manager SM3CX5 as Rolf has moved to Japan, and he does not intend to operate from there.

* Gibraltar - ZB2. During the month of September, stations located in Gibraltar were able to use the prefix ZG2 to celebrate Gibraltar National Day.

* Nevis Island - V4. Some time ago it was reported there would be a referendum on Nevis Island regarding independence status and to secede from St Kitts. Only 60% of the residents voted in favour of the secession against the required 75%. The result is that, for the time being, there is no possibility of Nevis being a new DXCC country.

* Nigeria - 5N0. OK1AUT will be active for three years from Lagos as 5N0/OK1AUT. QSL via his home call.

* Honduras - HR. Contrary to earlier reports, Mike K3UOC (ex 7Z5OO) will not be going to Honduras at all.

* Russian QSL Bureaus. It was reported some years ago, but here it is again. Russia has two QSL Bureaus. One is operated by the IARU recognised Russian Amateur Association, SRR, Box 59, Moscow, Russia. Three mailings per year.

The other dates from the Soviet time. Box 88, Moscow, Russia, the old bureau operated by the Krenkel Radio Amateur Club with one mailing per year.

* QSL Information. The correct QSL manager for ZD8T is AC4IV

* Juan Fernandez - CE0. Brian VK5FV reports that he worked CE0ZIS around 2130 UTC on 14215 kHz. It seems he favours the 14212 - 14213 kHz frequencies.

* Pitcairn Island - VP6. The Pitcairn Amateur Radio Club will be active on 22/27 October from Ducie Atoll (OC-182).

* Comoros - D6. Hermann DJ2BW will be on air from 25 October to 7 November as D68BW. He will be operating CW on all bands, with priority on the LF Bands. QSL to home call.

* Martinique - FM. Vincent F5JMV will be on air for three years as FMSJV. QSL to home call.

* Grenada - J3. Keep a lookout for J3 calls. More than a dozen US and European DXers will be active with the J3 prefix/home calls and as J37K, J38NA, J37L, J37A, J3X and as J3A from 20 to 27 October QSL J3A via WA8LOW, the others via home calls.

AWARDS

John Kelleher VK3DP
Federal Awards Officer
4 Brook Crescent, Box Hill South, VIC 3128
Tel: 03 9842 3888

New Entities

What are these new "entities" which have recently raised their heads? Given that some operators may have worked these islands years ago, only now do they aspire to be called separate DXCC countries. On closer inspection, the Marquesas Islands and Austral Islands are no more than outposts of French Polynesia (from Greek poly "many" and nesoi "islands").

The French Iles Marquises are located approximately 1200 km north-east of Tahiti. They are a pair of volcanic islands, namely Hiva Oa and Nuku Hiva. The larger of the two is Hiva Oa, some 200 square km. Mountains on this island rise to about 1200 m, falling directly to the open sea, having no coastal plain or fringing coral reef. It is the burial place of the French artist Paul Gauguin. Nuku Hiva is of rugged wooded terrain with Mt Tekao rising to 1110 m near the centre of this beautiful island of only 130 square km.

The French Iles Australies, also known as Tubuai Islands, form part of a vast submerged

mountain chain. They comprise five inhabited islands scattered over 1300 km, and are the most southern archipelago of French Polynesia.

At the time of going to press I had not researched Temotu Island, except to say that it forms part of the Solomon Islands group. DXCC approval for all the above-mentioned should occur very shortly this month.

Please take note that I usually devote the November *Awards Column* to YL and XYL members. I will print all information received by 1 October. Meantime, I will peruse some of the YL DX Awards listings.

Council of Europe Cup

While on the subject of things French, to honour the 50th Anniversary of the Council of Europe on 5 May 1999, the Council of Europe Radio Amateurs Club, and Radio Club TP2CE, have decided to award a Cup. Here are the Rules:

(1) All QSOs with the Radio Club station TP2CE and the other prefixes used: TP0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 50 and T71CE (DXpedition in San Marino) are eligible.

(2) Contacts with call signs TP2CE, TP10CE and TP50CE count five points and other QSOs one point.

(3) All QSOs on ALL HF bands, including WARC bands, from 1 June 1986 to 1 June 1999 are eligible.

(4) Two categories:

(a) Amateur stations licensed for more than five years; and

(b) Amateur stations licensed for less than five years as at 1 January 1999. To verify please send a photocopy of your licence.

The first three stations in each category will receive a 50th Anniversary Cup. The stations

* Iraq - YI. Special Event Station YI98BIF celebrated the 10th Babylon International Festival from 22 September to 1 October. QSL via Radio Club of Baghdad, Iraqi Association for Radio Amateurs, PO Box 55027, Baghdad, Iraq.

QSLs Received

TY1JJ (3 w - DK8ZD); 8P9Z (3 w - K4BAJ); FO0MIZ (4 w - VE3HO); FO0FI (4 w - K6SLO); ZK2FT (3 m - DL7FT); WA4FPW/NH1 (3 w - WA4FFW).

Thank You

I am always grateful for the assistance given to me by many of you. Special thanks are due to VK2EYF, VK2KFU, VK2TJF, VK2XH, VK4LV, VK5FV, VK6LC, VK9NS, JH1AJT, ARRL DX News Release, Ohio/Penn DX Bulletin, QRZ DX, The 425 DX News, The DX News Letter, The DX News Magazine, International DX Association (INDEXA) and the DX Magazine.

ranked fourth and fifth will receive a personalised banner of the Council of Europe. The deadline for the submission of logs is 1 August 1999. There is no need to enclose QSL cards. Your logs will be compared with those of the Radio Club.

The address for submission of logs is: Council of Europe Audio-Visual Resources Unit, Mr Kremer, Francis F6FQK, 67075 Strasbourg, France. E-mail: f6fjk@ref tm.fr.

Council of Europe Award

The Council of Europe Award is attributed to all licensed Amateur Radio Stations, and Short Wave Listeners that fulfil the following conditions. Contacts with member states of the Council of Europe (see list below), and Radio Club Station TP2CE (or TP0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 50).

1. HF
 - A. Mixed (CW - Phone - RTTY)
 - B. CW
 - C. Phone
 - D. RTTY
- E. Mono-band 160, 80, 40, 20, 17, 15, 12 or 10 metres, obtainable in Mixed, CW, Phone and RTTY.
- F. Five Band 80, 40, 20, 15 and 10 metres, obtainable in Mixed, CW, Phone or RTTY modes.
- G. Nine Band 160, 80, 40, 30, 20, 17, 15, 12 and 10 metres, in Mixed, CW, SSB, Phone or RTTY.
- H. YL Award, only with YL Stations.
2. 2-50 MHz, obtainable in Mixed, SSB, CW or RTTY.
3. Satellite.
4. A log extract, signed by two other amateurs, containing callsign, country, mode, frequency or band, and date should be sent to the Award Manager F6FQK, Kremer Francis, 31 rue Louis Pasteur, 67490 Dettwiller, France. OR Conseil de l'Europe, Regie des Moyens (Audiovisuels) Cerac, Mr Kremer Francis, 67075 Strasbourg Cedex, France. E-mail: f6fjk@ref tm.fr .

Fees for both Awards \$US10 or 12 IRCs.

Council of Europe Award - Countries List

Albania, Andorra, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Macedonia, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and Council of Europe Radio Club Station "TP".

Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator

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Times are changing. The year is drawing to a close and it is time that radio amateurs started to realise that they are going to have to live with intruders.

Why, I hear some ask? Well, it appears to me that most are doing "just that" now, otherwise observers and others would be forwarding logs each month, and at other times, to those States with Co-ordinators, or direct to me!

As amateurs we should not expect the Quoin Ridge HF Co-ordinating Centre to do all the objecting on our behalf. At present, objections to the use of amateur bands by illegal intruders can be carried out by Internet e-mail, by directing complaints to the Head Technician of the offending station, once the QTH is known.

In my term as Federal Intruder Watch Co-ordinator, I have received much support and suggestions for upgrading the IWS from the Tasmanian Area Office of ACA. These have mainly been pin-point references of intruders. We can not expect this to continue *ad infinitum*, nor should it!

Measures have been implemented to do more of this RDF at point A level. Other suggestions from the ACA have been looked at and trialled before being put into practice, since proving their worth, and in some cases streamlining procedures. My thanks, Dave. Primary observations emerged from the same source.

To repeat, times are changing. The International work of the Monitoring station has increased by 75%, and the Perth operation has closed down. So, more than ever, we need to stand on our own feet.

Commercial operators have their intruder problems also. Marine, Aircraft and many others pay largish sums of dollars to have their problems attended to; therefore they have preference over the amateur. Could we afford \$190.00 per hour? And who would pay it?

From last month (September) a much greater scrutiny of the log sheet has been carried out. All frequencies have been

Spotlight on SWLing

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Well, Spring is here and we are now noticing quite an improvement in propagation, as the sunspot numbers steadily increase. The higher frequencies are becoming active and I would surmise that the next few weeks will see these numbers sharply increase. The peak of this cycle is expected around 2000.

Now that I am back home in Tasmania, I have become involved in other activities and therefore have not been paying too much attention to short-wave. Propagation is certainly different here in northern Tasmania to SE Queensland.

Time Changes

Don't forget that there are going to be major changes to the broadcasting allocations on HF on 25 October when Europe and North America revert to standard time. That same weekend, NSW, Victoria, and South Australia will go over to Daylight Saving Time. Tasmania has been on it since 4 October and NZ from the 12th of the month.

DUBLIN

Recently, the President of the Republic of Ireland was in Australia. Dublin, as you may be aware, has been broadcasting to Australia

checked again, several times, before any RDF is contemplated from the ACA.

I still believe that the majority of receivers in use by amateurs are prone to "birdies" and "spurii", either internally or generated by our over-burdened electronic age of gadgets in the home or surroundings, thus creating "mysterious intruder signals".

My FT-747GX suffers this complaint, but the older GEC 402KN 15 valve receiver is very quiet and much preferred for this work. It has numerous filters, including crystal, built right into the system, not added on as with the DSP audio filter series. Readers can refer to *Electronics Australia* January 1996, page 29, if they wish to "read all about it".

via the facilities of WWCR in Nashville, Tennessee. Now a test transmission via the Merlin transmitters in Singapore has been heard. The time is 1000 UTC and the programming is identical to WWCR. The frequencies are 5070 kHz (WWCR) and 11740 kHz (Singapore).

Asian Languages

Have you noticed a dramatic increase in the number of HF operators mainly speaking in Asian languages? These signals are predominantly unauthorised and pop up on any frequency unannounced. I have heard them previously in aviation segments but now they are even operational within the major broadcasting allocations of HF. It seems out of control.

Second BBS World Service Network?

There have been consistent rumours of a second BBC World Service network commencing in the last week of October to coincide with the major schedule changes. This network may be all news.

Another Web Radio

I recently received an e-mail advising me about another Web remotely controlled shortwave radio. This one is based in Sweden and utilises either a Yaesu FT-757GX or an Icom PC radio. Use is restricted to registered users. The URL is <http://www.javaradio.com>.

Malaysia

Malaysia has been in the news lately with the Commonwealth Games and recent domestic upheaval. You can find the external service on 15295 kHz from 0630 UTC. A relay of the domestic network can be heard most evenings on 7295 kHz with English programming.

Well, that is all for October. Please note that I no longer use the packet address of VK7RH@VK7BBS#LTN.TAS.AUS.OC. ar

What I am saying is that, unless you can guarantee your receiver does not generate birdies, etc, take another look at the intruder on B9W or F1B, preferably with a second or third receiver on the same frequency, before the log is sent to your co-ordinator, or to me.

Notes from Bob ZL1BAD, the Region III Co-ordinator, indicate intrusion on frequencies 14146.5, 14145.5, 14146.5 and 14147.5 kHz, mode F1B at 144 bds, 240 Hz shift, on 24 hours a day from near Moscow. Steps are being taken to remove this long term intruder. All Region administrators are being advised to complain.

ar

ARDF

Amateur Radio Direction Finding

Ron Graham VK4BRG

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E-mail: rongraham@magnet.com.au

Experimenting and Self Education

Literature defining Amateur Radio always mentions the experimental and self education aspects of the hobby. I think ARDF allows us, amongst other things, to pursue these aims.

ARDF equipment may range from the very simple up to the quite complex. In a lot of respects, it's the simpler type of equipment that gives us the most scope for experimenting. Some ideas, that I would like the time to follow up, are along the theme of simple and inexpensive ARDF equipment:

- A simple 2 metre AM type receiver, say a fairly selective tuned circuit, diode detector, AF amplifier. This could prove satisfactory over a range of 100 metres or so and thus form a suitable, inexpensive receiver for groups of young people getting involved in ARDF.

- One hears of 2 metre beams being made from a couple of dollars worth of materials. This could be followed up and hopefully provide the necessary antenna for the above-mentioned receiver.

- A simple 80 metre DF receiver, possibly direct conversion on 3.5795 MHz where inexpensive colour burst crystals are available. Maybe it could use a ferrite rod antenna and dispense with the complexity of a sense antenna.

With the theme of keeping things simple, users of this equipment could operate in a defined area. The starting, and hidden transmitter positions, can be chosen so that it is not necessary for competitors to need to be able to resolve the 180 degree ambiguity problem of the ferrite rod antenna.

Building Equipment

One also reads, these days, of amateurs becoming "black box" operators. ARDF equipment does provide an opportunity for us to actually build equipment.

In my opinion, some of those simple projects could also provide excellent construction projects for radio clubs, scouts, guides, and other groups. Imagine, for example, demonstrating the directional properties of a two metre beam made in a few minutes from a few scraps of commonly available material!

Learning Aspects

In addition to the learning opportunities mentioned above, ARDF operating gives one marvellous opportunity to experience various aspects of radio wave propagation.

For example, I normally give a final test to some DF equipment I build by using it with a small signal source placed on the edge of the veranda. This signal source radiates with an antenna just 50 mm long. I note, with interest, that if the signal source is not placed centrally between the steel veranda posts, the signal appears to come from the closer post.

Observing signal reflections from large metal objects is also interesting. Another interesting aspect, that is easily demonstrated, is the 20 dB or so difference in signal strength when a vertically polarised receive antenna is used with a horizontally polarised transmit antenna (or vice versa), commonly called cross polarisation.

This phenomena can be used as a DF operating technique to attenuate signals quickly by simply changing the polarisation of your DF receive antenna. The antenna direction properties are, of course, still usable under these conditions.

Power Line Noise

Traditionally, DF equipment in the 70 MHz region has been used to locate noisy power lines.

A couple of years ago I became aware of emergency beacon DF equipment on 121.5 MHz being used, and I was told it was providing superior performance. The theory was that, at 70 odd MHz, the power lines still acted as reasonable transmission lines and thus the signal from a noise source could appear to come from a power pole quite some distance from the actual noise source. Apparently, at the higher frequency of 121.5

MHz, the transmission line is less efficient, and thus the noise signal more localised. Consequently the noise source is often quicker and easier to locate.

Just a few weeks ago I learnt from the Rockhampton ACA office that they had occasion to try some 243 MHz emergency beacon DF equipment in assisting to locate power line noise and that they were very impressed with the results. I guess the same theory of less efficient transmission lines applies and thus the actual noise source becomes more obvious.

By the way, those emergency beacons normally operate on 121.5 MHz and double that frequency, 243 MHz.

Apart from the slight education value of the above, what does this mean to the Amateur? If you have two metre amateur DF equipment, often referred to as a sniffer, you have the means to locate power line and other noise sources around your QTH.

More on Emergency Beacons

There were some 35 genuine and 111 inadvertent/malicious activations in the Australian area over the last six months. With more and more beacons being used in more spheres (bush walkers, four wheel drive operators, personal security, etc), as well as the traditional marine and aviation areas, this problem is naturally going to increase.

The above figures did not include those inadvertent/malicious activations that were quickly resolvable with, say, a phone call.

Those searches can often be quite lengthy and expensive, particularly when aircraft and helicopters are involved. The Australian Search and Rescue Co-ordination Centre in Canberra is addressing the problem. During talks with one of their officers, who was preparing a report on this matter, I mentioned that Amateur Operators could be in a good position to assist, maybe as part of WICEN. He mentioned that he has been and is considering Amateur involvement.

Maybe the WIA should be addressing this matter as it could offer marvellous exposure and involvement of the Amateur Service to a worthwhile public cause. This should also offer many benefits to Amateur Radio in general, and to those amateurs who became involved in particular.

Guides

It is pleasing to note that the Guides, on a State level in WA, are becoming involved in ARDF. They join the SA Guides.

In both cases, amateurs are apparently involved. It would be great to hear from those amateurs and possibly add a report from them to this column. Looks like the girls (Guides) are ahead of the boys (Scouts) on this one!

WIA Call Book 99

The latest listings of over 16,000 Australian radio amateur callsigns.

Bonus "Callsigns on Disk" supplement available for only \$10!

Limited print run - don't miss out!

FTAC Notes

John Martin VK3KWA

Chairman

Federal Technical Advisory Committee
PO Box 2178, Caulfield Junction VIC 3161

Future of the 70 cm Band

Recently there has been some concern about the ACA's use of temporary allocations in the 70 cm band. The ACA allocated two frequencies for yachting trials in the Sydney area during August, and some amateurs are concerned that these temporary allocations are a threat to the 70 cm band.

A couple of points need to be made about these allocations. First is the fact that there is nothing new about them. There have been many of them in the past - they just haven't been publicised.

Second is the point that, while the amateur service has secondary status in the 70 cm band, temporary allocations are what you could call sub-secondary. The ACA consults the WIA about proposed frequencies for temporary allocations, and we have the right to say no to any temporary allocations that would interfere with amateur operation.

So, there is no need for concern that temporary allocations might be the thin end of a wedge to reduce amateur access to the 70 cm band. In fact, they are probably a good thing. Better to share our spectrum with occasional low power temporary stations than to find it gobbled up by commercial interests.

Data Base Update

At the time of writing, the database update for the new *WIA Call Book 99* has just been completed.

There have been many changes to the beacon, repeater and packet lists, and I would like to thank the following amateurs for information. VK2EO, VK2KU, VK2MT, VK2ATY, VK2JPR, VK2TDT, VK2XGJ, VK3XV, VK3TLW, VK4KVM, VK4ZBV, VK5AVQ, VK6HK, VK6UU, VK6ZRT and ZL2TWS. Also the secretaries of the following clubs: Central Coast, Coffs Harbour, Far South Coast, Hornsby, Hunter Branch, Kempsey, Mid South Coast, Oxley Region, and Wagga.

Last year I received a full update to the New Zealand beacon list just after the Call Book went to press. This year's list includes these

AMSAT Australia

Bill Magnusson VK3JT

RMS1627, Milawa VIC 3678

E-mail: vk3jh@amsat.org

An Old Friend from MIR will Fly on the ISS.

The AMSAT News Service has reported that veteran cosmonaut Sergei Krikalev, who will be one of the first full-time residents on board the International Space Station, will join the crew of STS-88, the first American assembly mission.

Krikalev will join Commander Robert Cabana, Pilot Rick Sturckow, and Mission Specialists Nancy Currie, Jerry Ross and Jim Newman when the Space Shuttle Endeavour launches this December. The seven-day mission will be highlighted by the mating of the United States built 'Unity' module to the Russian built 'Zarya' control module, which will already be in orbit.

Zarya, which was built for NASA by Boeing and the Khrunichev Enterprise, is scheduled for launch on a Russian Space Agency Proton rocket from the Baikonur Cosmodrome this November. "Sergei's experience with both the US and Russian programs and his familiarity with the Shuttle make him a valuable addition to this crew," said David Leestma, Director of Flight Crew Operations at NASA's Johnson Space Centre.

A cosmonaut since 1983, Krikalev has accumulated more than one year and three months in space as a member of two MIR space station crews. He has also flown on board the Shuttle once before, as a member of the STS-60 crew in February 1994. During that nine-day mission, Krikalev operated the

changes, along with other information received since then.

The list of LF beacons has been revised extensively, thanks to much information from VK3BRZ. The world-wide 6 and 10 metre beacon lists have also been updated with new and more detailed information. New material this year includes listings of all Australian AM and FM broadcast stations.

If you find any errors or omissions in the new *WIA Call Book 99*, please let me know and I will publish the details.

shuttle's robot arm and supported a wide variety of science experiments. Sergei will be known to Australian amateurs from his days on MIR when he made many voice contacts with VK stations.

Amateur Radio Operators in Space

According to the ARRL news service, the number of astronauts with ham tickets now stands at 86. It seems that NASA realises the great public relations spin-off from having amateur radio involved in space operations. We shouldn't underestimate the importance of this situation from our own perspective.

Our bands, in particular our VHF/UHF bands, have never been more threatened by commercial interests than right now. The close involvement of amateur radio in space operations will be influential in Government department policy development and will give credibility to the work of our delegates to IARU and WARC.

We owe a debt of gratitude to all those at NASA and the various AMSAT bodies around the world who are involved in the Astronaut Amateur Radio Training Program and in efforts on-going towards the establishment of a permanent amateur radio presence in space. These things do not "grow on trees". They are not simply or easily granted. They are the result of long and often difficult negotiations at the highest levels of administration. Read on, the following illustrates what I mean.

International Space Station News (ARISS Lives!)

AMSAT News Service, via Frank Bauer KA3HDO, AMSAT-NA Vice President for Human Space Flight Programs, reports that amateur radio delegates representing seven of the eight countries involved in "Amateur Radio aboard the International Space Station" (ARISS) met in England in late July to continue plans to establish the first permanent amateur radio presence in space.

The session, chaired by "Space Amateur Radio Experiment" (SAREX) Working Group Chairman Roy Neal K6DUE, was held

UHF Link Frequencies

In February and July I mentioned two possible changes to the band plan link segments on the 70 and 23 cm bands

One is to give priority to high speed data links in the 421 - 422 and 441 - 442 MHz segments. The other is to make provision for wide offset link pairing on 23 cm, for example, using 1240 / 1292 MHz to get a 52 MHz offset. These changes have now been added to the band plans.

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ISS right from the start of construction. "What we're going to do is develop this in stages," he said.

The first flight of hardware aboard STS-88 (at the end of this year) will include a two metre hand-held and packet TNC capability provided by the US team that will be coupled with an antenna system that will be a cooperative effort of the Italian and Russian teams.

The ISS service module, due to be launched next summer, is the section of the ISS in which astronauts and cosmonauts will live during construction. The interim station for the first ISS crew at that point would add (a US supplied) 70 cm capability, a German-designed "digitalizer," and eventually a transportable station that could include SSTV and full-duplex VHF/UHF.

The first crews to actually live aboard the ISS will graduate to mobile-type transceivers. Bauer says the final ISS equipment complement is still in the conceptual stages but is likely to include all-mode capability from 10 metres up through 13 cm.

He was quite excited about the teamwork exhibited by the international partners, stating that "as an international team, we were able to quickly put together an interim station, furthering developments already in progress by Will Marchant KC6ROL and Lou McFadin W5DID in the US, Thomas Kieselbach DL2MDE in Germany and Sergei Samburov RV3DR in Russia."

Surrey ARISS delegates also discussed time-sharing and scheduling of the ham stations, crew training, educational opportunities, fund-raising, call signs, and frequencies. Details on these issues remain to be decided. Neal credited SAREX Working Group Principal Investigator Matt Bordelon KC5BTI, for "a superb job of lining up the NASA/ISS officials and channels for what's about to happen."

A key player on the ARISS team, Bordelon is scheduled to travel to Russia soon to work out details of the station installation aboard the ISS service module with Serge Samburov RV3DR, the Russian delegate.

Neal said he was gratified to see the plans coming together to put amateur radio aboard the ISS. "These meetings have the world-wide Amateur Radio family on track," he said. "Amateur radio is now getting ready to fly onboard!"

White said the most significant aspect of the session came on the afternoon of the second day, when countries stepped forward to accept responsibility for various aspects of each Amateur Radio station. "For instance, for the interim Amateur Radio station, the US took responsibility for the packet module, adapter module, radio, and associated cables," she said. White said Germany agreed

to build the digitalizer and to work with Russia to develop the antenna feed-through system. Italy will design and fabricate the antennas, and Russia will install the RF cables and antennas. For the transportable set-up, the US will handle the equipment integration and the NASA-required Safety Data Package, while Germany will design and build the system itself.

"The ARISS project will truly be an international project," said White. "It will be well worth our years of work, because each delegate believes ARISS is a wonderful resource for the Amateur Radio service and a great educational tool for our world's youth."

Soap-Box Time

Now, a dissertation like the one above never fails to leave me breathless. Faced with all this top level activity, how can the average amateur, the ordinary hobbyist, the satellite user, help?

One can feel rather at a loss to contribute at any meaningful level. Not so! You can do more than be a bystander!

The very best way we can all help is to show these people our support by joining an AMSAT group, in our case AMSAT-VK. Your membership subscription and sheer numbers will deliver a powerful message to these heroes that their efforts are appreciated. Our delegates will go to meetings knowing that they carry with them the weight of opinion of a large body of like minded amateurs. With many of our frequencies under threat and the "prophets of doom" already at work, the time has never been more appropriate to give these people your support.

A short time from now you will be able to press a button in your radio shack and work the International Space Station on your favourite frequency or mode. Wouldn't it be nice to know you had supported those who made it all happen?

New WIA Members

The WIA bids a warm welcome to the following new members who were recently entered into the WIA Membership Register:

L21076	MR I L GUY
L21077	MR R RONTALE
L21078	MR N CATTABRIGA
VK2BGR	MR G ROBINSON
VK2CBD	MR B J DAWSON
VK2CCC	MR J C MCKINNON
VK2CIF	MR J C MARRIOTT
VK2HCL	MR G G LEEDHAM
VK2QG	MR P M REEDMAN
VK2UTE	MR G W CLULOW

VHF/UHF

An Expanding World

Eric Jamieson VK5LP

PO Box 189, Menangle SA 5264
Fax: 08 8575 1777

Packet: VK5LP@VK5WL.HADL.SA.AU
E-mail: vk5lp@ozemail.com.au

All times are UTC

Beacons

The following beacons are now operational:

50.000 GB3BUX IO93
50.040 ZL3SIX RE66
50.052 PYV1AA GG66
50.064 GB3LER IO90
50.090 LW5EJU GF05nm 12 watts to dipole, also runs on 28.226 MHz.

Colin VK5DK advises that the VK5RSE 70 cm (432.550 MHz) beacon is back on the air after minor repairs following water damage. A power module was replaced and power set to 25 watts feeding two phased antennas, one facing east and one facing west. Both antennas are eight elements of the DL6WU design, mounted 16 metres up a self-supporting tower on Mount Graham, 5 km east of Millicent and about 45 km north west of Mount Gambier, the same location as the VK5RSE two metre beacon.

With respect to VK5RSE/b on 144.550, Colin VK5DK reports: The beacon has 4 x 4 element DL6WU design Yagis connected via a four way power divider. One Yagi beamed west, one towards Adelaide, one north east (VK2/VK4) and one east.

Colin would be interested in any reports of how the beacon's signal is now compared to previously when a turnstile was used as the antenna. E-mail Colin at vk5dk@ansomec.com.au.

Six Metres

Ron Graham VK4BRG reports on 3/9 that TEP signals from stations to the north had been heard for two weeks. He reports:

2/9 1019: JR1RJU/JD1 in QL17 who said he would be QRT from 3/9

1034: JA1WLO 5x9 each way with other JAs heard at good strength

1038: V73AT 5x4 each way Tim also reported working VR98 (Hong Kong), VK8, VK4, KH6, JD1, JA and on 1/9 a good one in A43ZN in Oman.

Tim also mentioned 28.885 MHz being next to unusable in the evenings due to Asian

QRM. Ron wonders if this will become a problem in VK as conditions improve? He and some others are using 21.445 for liaison.

Steve VK3OT/VK6SIX/KL7SIX supplied the following from the JA Cluster on 3/9:

1343 VK8AH - JA2POK 50.110 SSB
1339 VK8AH - HL1LTC 50.110 SSB
1300 VK8VF/b - JL4GTO 50.057
1250 VR98LC - KH2D 50.110 CW QSO RST 559

1216 VK8AH - KH2D 50.109 SSB QSO
1114 VK8AH - V73AT 50.110 SSB heard
1109 VK8AH - C21JH 50.110 SSB QSO
1015 VK6JQ - JE4JFP/4 50.0959 CW 579
1011 VK4AFC - V73AT 50.106 SSB QSO

5x3

0936 VK8VF/b - V73AT 50.057 heard

0935 V73AT - YB0ARA/9 50.110 CW QSO
0841 V73AT - 55.2498, 55.2498 video/TV

American Samoa

0655 V73AT - JA5FDI 50.110.8 CW
0703 V73AT - JA2IB 50.106 CW
0702 V73AT - 49.750, 49.750 video/TV
0330 ZL3TIC - 49.750, 49.7480 strong video/TV

Steve VK3OT reported that on 3/9 sun noise was very obvious at 2100 (sunrise) with bursts and pulses. He believes that the Pacific path is going to open early this year possibly first or second week in November.

He says: My contingency plans for operating from KL7 Take a note of my phone number 1 970 373 5435. Sunrise is 1400 approx and sunset 0200 on 21 September. I think my maths are right. It is six hours ahead of east coast VK and is on Alaska DST at moment. Please don't call before 6 am or after 1000 pm AKDST OK?

I will monitor the 48 MHz TV from Europe and have the frequency list. Beacons I'm not so sure about. Let's hope for a chance between September and December VK path will be 0000 to 0130 just before my sunset in Wasilla. Location is 850 feet asl and take off to Pacific is good.

From VK5KK: Time to get your six metre gear working. This morning's (29/8) MUf is peaking to about 35 MHz on the NE path to USA. Usual peak is about late September. JA openings are just starting to happen again. For more MUf predictions see the map at <http://holly.cc.uleth.ca/solar/www/realtimetime.html>

From Mike ZL3TIC: I have received many emails seeking the 45/46/55 MHz TV and offsets in ZL and VK. A list of all the offsets and TV stations in the Pacific can be found at <http://www.radiosinfo.co.nz/bmfreql.htm>

22/8: Bob ZL3TY had a brief opening to VK. 0141: VK7RAE/b 539, 46.240 MHz VK TV S2; 0150: VK3TMRP 5x5, 0157: VK3XLD 5x3, 0204: VK3ZYS 3x1, 0208:

46.240, 51.740 MHz TV carriers up to S9; 1045: 45.250 MHz TV carrier auroral from south.

Jack Haden VK2GJH/T30JH/C21JH

A letter dated 6/9 from Jack Haden VK2GJH reports that he has just returned from Nauru and Tarawa where he had been active as C21JH and T30JH over the past three weeks.

Nothing was noted on 50 MHz from Tarawa due to severe solar activity which took place during the 18-25/8. However, JA4, BG7, BG5, BV6, KH8, VK4, WB5, WB6 and KH0 were worked on 29 MHz FM.

Jack wrote: The solar disturbances followed me to Nauru but things started to pick up on 31/8 with the solar figures 172 17 and 2, there was NZ TV 45.260 MHz at S9 from 2255 while 45.250 was up and down at the same time. Despite many calls on 28.885 and 50.110 MHz SSB not one ZL was raised.

On 2/9 the figures were 177 15 and 2, nothing from the VK/ZL area all day. At 1010 I heard CW around 50.108 MHz and at 1012 Phil YB0ARA/9 was worked at 5x2-7 SSB report. V73AT in the Marshalls came on around 1017 and spoke with Phil, however V73AT could not hear me nor I him despite the good propagation to YB. At 1037 found VK8VF/b at S52, many calls on 28.885 and 50.110 but no one raised.

On 3/9 the figures were 163 8 and 2 and the first indicator to come through was VK8VF/b at S19 from 0405 to 0409, again no one raised on 28.885 or 50.110 SSB. Even tried 29.600 FM as I had worked VK8ZMA/4 Thursday Island and VK8RHH in Darwin just days back on 29/8, but no luck. VK8VF/b again at 1009 S19, rushed to 28.885 and 29.600 FM but no one about, many calls placed on 50.110 with zero result. At 1100 VK8VF/b S39 and made a long CQ on 50.110 SSB, this netted VK8AH 1101 Sx6, YB0ARA/9 at 1104 at 5x1 and VK8MS at 1112 3x1.

After working those three I checked the indicators and found beacon JA2IGY/b S19 at 1114, again many calls placed on 28.885, 29.300 FM JA call spot for 29 MHz FM but not a soul heard. JA2IGY/b finally faded out at 1159 with not one JA heard.

On 4/9 the figures were 163 8 and 2 and 29 MHz FM was very lively during the day. At 1026 JA2IGY/b was 419, Malaysian TV was very strong at 1048 at S6 peaking S9, nothing raised on 28.885 or 50.110. At 1050 YB0ARA/9 heard on CW 50.105 MHz S69 and he was still there at 1245.

No a single station worked so I returned to HF to work the hordes in Europe. The 29 MHz FM band performed well, VK8, VK4, VK3, VK2, ZL1, FK8, SW1, KH6, KH8, BG4, BG6, BD7, JA3 and JA6 all worked. Heard

VK5, ZL3, KB4, W6 and N5 but not worked.
Like six metres, no chit-chat on the DX call channel 29 600 FM.

As the six metre beam was left in Tarawa due to the poor conditions, all the mentioned notes from Nauru were derived from the IC-736 HF plus 6 m rig and an Emtronics ED-52C trap dipole 80 to 10 metres through a Yaesu FC-901 ATU to make it work on six. Better than nothing and contacts were made. I am sure more contacts would have been made if people were about.

Ruben C21RK will repair his six metre antenna when he finds some spare time; also Norman C21INJ expressed interest in six metres after seeing my set-up.

Is anyone willing to donate a decent five element six metre beam for Nauru, not a heap of junk as they corrode quickly with the salt air up there. I could go back there any time before Christmas, not sure.

News Release

50 MHz station at Seancet 98 Convention

The special station to be set up at the Seancet 98 Convention Hotel will include a 50 MHz operation. The station will operate as follows:

Call sign:	9V8SEA
Rig:	Yassu FT-620B
Power:	10 watts
Tx frequency:	CW 50.085 MHz SSB 50.115 MHz
Rx frequency:	50.000 to 51.000 MHz
Antenna:	6 element rotatable Yagi
Commencement:	0200 UTC 13 November 1998
Shut down:	0700 UTC 15 November 1998

Hotel rates have now been reduced to \$140 per day for both single and double occupancy. Additional perks such as free breakfast will hold.

For more information contact Mr S Sasaki 9V1YJ - e-mail msksg@com.sg

Overseas

Internet Six News from Geoff GJ4ICD.

4/8: JA1VOK reports: Heard VK8VF/b 539 at 1129, and worked Andrew VK8AH on 50.110/50.130 SSB 5x7 at 1135 probably for the first time from eastern JA this summer.

6/8: Alan 3CS1 reports: Very strong signals to Europe. Managed to have 41 QSOs in the hour the band was open. I will always continue to work split. Tx on 50.130 and Rx on 50.180-190, during major openings. 7/8: No strong signals - all QSOs were CW and weak. The strongest was 539. I had 23 QSOs.

10/8: PY5CC reported a good opening to Europe. The band opened 1843 until 2004 and he worked 101 stations in 19 countries. Worked into EA, 9A, I, T77, DL, SS, YU, US5, OE6, ON, F, IS0, HB9, G, CT1, 9H, OZ, GJ and GU. The good news is that it

was the first time he had worked the Ukraine with US5CCO, new zone, grid and country number 159. Lost YO and HB0/HB9QQ.

12/8: JA1VOK worked VK4DO 5x6 at 0835, VK4FNQ 5x9 at 0909 and heard VK8RAS/b (PG66) 569 at 0812 for the first time this season.

28/8/98: 1810: ZS6AXT heard in GJ 539 - remember this? 10 years to the day! Earlier comments dr GJ4ICD: ZS6 this month? 10 years coming up! I have been doing some checking on the openings last cycle, on 28/8/88 at 1716 ZS6AXT was into GJ for the first ever ZS6 worked on six. From then on there were numerous openings to South Africa until 31/10/93, that's five years of ZS6s, so don't panic when you hear your first ZS station on six metres, there will be many more. Watch the band later this month for ZS6 and VK in October.

Dave NJJHV has won the 1998 Challenge with the QSOs to Japan at 10,263 km, the best DX for 17 years! de GJ4ICD

Ted Collins G4UPS for his August report covers from 16 to 31 August. In that period Ted worked 9A, 9H, CN, CT, DJ, EH, EH8, EH9, ES, F, GB3, GI4, I, IS0, LA, LY, OD, OE, OH, OK, OM, ON, OZ, PA, SS3, SM, SP, SV, UR5, YU and ZB for a total of 31 countries. [Where are stations in EI, HA, LZ, YL and YO? I'm just curious. VK5LP.]

UK Six Metre Group (UKSMG) Announcement Page

Chris G3WOS reports: Cycle 23 is upon us with sunspot counts up to the 165 mark, so don't forget to visit the UK Six Metre Group "announcement page" daily at <http://www.uksmg.org/notice.htm>.

50 MHz and 144 MHz

Sporadic E

(Emil W3EP from The World Above 50 MHz in November QST)

The most interesting openings for July involved the western states, whose loyal VHFers often feel left out of the exciting events that seem common in the rest of the country. Six metre operators as far east as New Mexico had two chances to work Japan. Those in the Pacific Northwest found Hawaii on 50 MHz via sporadic E. Stations from Washington to southern California enjoyed several days of tropospheric ducting into Hawaii on 144 MHz and higher.

Two unusual double-hop openings linked Hawaii and the western states for the first time in many years. On 4 July at 0341, Lance Collister W7GJ (DN27) in Montana completed a contact with WH6XM for his fiftieth state. There were no other reports during this event, but plenty from the opening to Hawaii on 15 July. As early as 2315, Colorado stations were working KH7FV and others in

Hawaii. N5JHV in New Mexico made the grade by 0130.

There was sporadic E on the band somewhere in the US and Canada on more than 20 days of the month - at least five with double-hop conditions, but many reports complained that openings were generally scarce and of short duration. Spicing up the rather ho-hum conditions were a number of DX stations that could be worked via single hop, including ZF1DG, CO2OJ, KG4AU, KG4GC, VP5JM, and XE1NVX (EK09).

Two Metres and Above

Ron VK3AFW reports that on 2/9 there was a strong opening from Canberra to Adelaide on two metres. Most contacts were by FM and mainly via repeaters. It started at around 0000 and remained until 0300.

It was probably an Es opening, although it is a bit early for such on two metres. The footprint apparently extended into the Barossa Valley (VK5) and along the south east region of NSW, from the eastern end of the Victorian border to Wagga. (info from Reg VK1MP).

David VK5KK comments: Further to Ron VK3AFW's observations on the Adelaide/Canberra path on 2/9, this may have been tropo as we had reasonable conditions the previous night from Adelaide to central and western Victoria on the tail of the earlier VK6 opening.

I gather from comments this end that VK5RBV (146.825 MHz, also 438.425 MHz) was the repeater accessed. This repeater has recently been relocated to a new site east of Tanunda about 90 km NE of Adelaide. Height is about 550 m ASL. It has an absolutely perfect eastern look out (better than Mount Lofty VK3VF, or any of our other repeaters to the east). Quite a few VK3s have accessed both inputs over winter, sometimes well past mid morning.

The repeater site tests have been so good that plans are progressing to locate a beacon on the same site (432.455 MHz) beaming 80 to 150 degrees. This should be of interest to central VK2 and VK3. I'll keep the reflector informed as to when it will be available.

Gordon VK2ZAB says that most daytime activity occurs at weekends. However, that doesn't mean that there is no activity during daylight hours Monday through Friday.

He reports. *From this location the following stations have been worked on two metres and/or above on recent weekdays :*

VK4AFL Birkdale, Brisbane, VK2KU Springwood, VK3BWT Mallacoota, VK4T2L Hervey Bay VK2TWR Nimmitabel, VK4IC Caboolture, VK4ZOW Pittsworth, VK2EMA Tottenham, VK2FHN Shellharbour, VK2TP Wellington, VK2AAS/p Mollymook, VK2FA/m Newcastle, VK1MP Canberra, VK3TMP

Somerville, VK2ZW Stroud, VK2ZT Mount Pleasant and VK2BE Earlwood, Sydney.

Others sometimes heard include VK1BG, VK2BZE, VK3AJN, VK3AMH, VK2APG and VK1D/A/m. Apologies to those missed.

The point is that there is activity. Most active time is from about 2115 until about 2300. Most participants are retired, some get on before they go to work.

Chas VK3BRZ adds: I heartily concur with Gordon VK2ZAB. There is a surprising amount of activity, and propagation, even through the winter. But we want more, especially on 70 cm.

At this time of year we have great inland tropo to central VK2 from the Melbourne/Geelong area. There is also consistently good propagation to VK7, and occasionally to Adelaide. But where is everybody? Is Tasmania still there? Their lights are on, but there's never anybody home.

We are also coming up to a period of increasing auroral activity. My experience from the last sunspot cycle was that very few auroral events were exploited by VHFers. Most of the time all I could do was sit and listen to beacons.

Lest you think that auroras are of interest to southern dwellers only, I point out that I have worked several Sydney stations, as well as VK2MZ and VK2DVZ at Forster and Taree. Signals have even been heard as far as southern VK4.

Any evening after about 1100 it is likely that David VK3XLD and I are either listening on 144.100 or gas bagging on 144.300. We always leave breaks between overs for callers. If anyone wants a shed they can call me on (03) 52823 167.

Glen VK4ZTL adds his bit: Good on you Gordon. How many two metre SSB rigs are out there collecting dust? I listen every evening from 0800 till late, and make an effort to be on air on Tuesday and Thursday mornings (plus the weekends) from 2100 - if you put in the time you will get results!

Spring VHF/UHF Contest

Rod VK2TWR sends these preliminary notes, which were just too late for last month's issue. The inaugural VHF/UHF Spring Contest has become a reality. The contest will take place on the weekend of 14-15 November over a 24 hour period.

The rules of the contest will be the same as the contest held at the end of January each year. It will be for six metres and above but operators must operate above 50.150 MHz. The Contest Manager is John Martin VK3KWA.

Depending on the success of this contest it may become a permanent fixture on the WIA Contest Calendar. Any enquiries, contact Rod VK2TWR by e-mail towers@srn.blamac.com.au or John VK3KWA on 03 9580 2620 phone, 03 9580 1724 Fax.

com.au or John VK3KWA on 03 9580 2620 phone, 03 9580 1724 Fax.

Since the above initial message, Rod has advised the following changes:

Contacts every two hours rather than three hours - I think that will make us busy portable stations as two hours will be better. The contest commences at 0200, giving stations more opportunity to get onto their hills and set up if they are working all day Friday.

Radio Telescope

Trevor VK4AFL advises that: Whilst in the US recently I visited the world's largest radio telescope located near Socorro, New Mexico. The self-guided tour included a theatre presentation, a visitor centre and close-up of one of the dishes. I thought a few facts about this impressive facility might be of interest to readers of your column.

Completed in the late 1970s at a cost of \$78 million, the array, aptly named the VLA

The inaugural VHF/UHF Spring Contest will take place on the weekend of 14-15 November over a 24 hour period.

(Very Large Array), is composed of 27 x 82 foot dishes each weighing 230 tons and spread out over 32 km. A 28th dish is used as a spare and is housed in a 150 foot high shed.

All the dishes are moved on a railway track system so the shape and size of the array can be configured to suit different applications. At optimal points along the track each dish is connected via a small flexible waveguide to the main 60 mm waveguide and complex computer software combines each output correcting for variations in dish spacings, ie the delay.

There are six feed options which allow reception of weak signals between 400 MHz and 40 GHz, some gain on the latter; pretty good on the former too! Each pre-amp is cooled to -430 degrees C. Unfortunately, I was unable to obtain gain figures but sensitivity is such that remnants of the big bang can still be heard and most everything else in between. I wondered what sun noise might be like! Just one of those dishes would help my 432 signal along!

Microwaves

David VK5KK reports on changes at the VK5RLZ 12 cm ATV repeater site.

From 22/8 the north beam antenna on the VK5RLZ 2.415 GHz FM TV transmitter has been removed leaving the south beam

antenna only. This is a temporary change, for reasons explained further.

This will have the effect of increasing the signal going south by up to 3 dB, ie in a direction of 110-270 degrees from the Water Tower. The down side is the 10-20 dB reduction to the north. Any feedback on signal increase/decrease will be appreciated. If you have lost the signal, please let me know.

As of 23/8 tests will commence from the Churchill Rd, Anstey's Hill site of the North East Radio Club on 2.439 GHz FM TV (VK5GRC). The tests will be between 6-12 pm (local) each night, test pattern only. Equipment five watts into a single slot antenna (the one removed from VK5RLZ), beaming from 200-360 degrees, covering the Central and North Eastern parts of Adelaide. Again, any reports on the Anstey's site will be appreciated.

Gigarange

David VK5KK briefly with a disturbing announcement: Panasonic introduces GigaRange, the first cordless phone to take advantage of the 2.4 GHz frequency. He wonders how the ACA will go type approving these?

Silent Keys

It is with regret that I announce the passing of Don VK5ADC. Don suffered a fatal heart attack on Friday, 14 August 1998.

Don was an active member of the Port Adelaide Club and a current serving member of the VK5 Division WIA Council as Minute Secretary, de VK5KK.

Sidney James Smith VK6SJ died 28 April 1998. Sid was a foundation member and Life Member of the WA VHF Group. Sid was involved in the radio scene for nearly 50 years. He worked first as a baker, then joined the PMG Department Broadcasting and worked at country radio and TV sites at Dalwallinu, Wagin and Bunbury.

A full list of Sid's contributions to life are contained in the August 1998 issue of *MHz to GHz*, the Official Bulletin of The West Australian VHF Group Inc.

Closure

By the time you read this you should be watching six metres very closely. Ten years ago activity was rapidly increasing especially to the US and not long after to Europe.

Closing with two thoughts for the month.

1. There's a way of transferring funds that is even faster than electronic banking. It's called marriage; and

2. If you indulge in self-pity, the only sympathy you can expect is from the same source.

73 from *The Voice by the Lake*

Silent Keys

*Due to space demands,
obituaries should be no
longer than 200 words*

basic electronics and kit building and, in the midst of all this mayhem, still find some time to take up the microphone as well.

Des's interests, apart from Amateur Radio, were many and varied. He loved gardening, belonged to the Herb Society, was active at the Surrey Hills Community Centre, wrote poetry and was learning to paint. He was also a member of the Historical Radio Society.

Community Broadcaster "Whitehorse FM" had the good fortune to have Des Bird on board as part of the team. From its inception Des was involved in getting it on air and keeping it there. He was a very able campaigner and fund raiser for Whitehorse FM, as many of us found out.

After a successful heart by-pass operation, which was soon followed by renal and prostate surgery, Des finally succumbed to bone cancer.

He'll be remembered by all of us who knew him as a family man, renowned for his generosity to others and for the strength, courage and dignity he showed in facing the inevitable.

Rest in Peace, Des.
Carl Schlink VK3EMF

Don Christiansen VK5ADC

Don Christiansen VK5ADC died on 15 August, aged 64 years, at his home in Osborne, SA.

Employed by General Motors for 36 years as an electrical fitter, he was always an "anchorman" for social "tug-of-war" events and known for a "Heels In" and "I Shall Not Be Moved" approach. President of the Electrical Trades Union for many years he had a strong sense of fair play. He was proud of his Norwegian antecedents.

A stalwart supporter of the WIA, Don was a member of the Divisional Council in the 1970s and a member of the current Council with the duties of Minute Secretary. Contributing to Amateur Radio in many ways, he kept skeds, participated in nets and was a member of the Port Adelaide Radio Club.

As Divisional President I appreciated his loyalty. He would make his opinion known when he felt it necessary, but was amenable to discussion. It was worthwhile listening to his advice and comments.

I was privileged to speak at Don's funeral service on behalf of the Wireless Institute and as a friend. Around 20 other Amateur Radio operators were present.

Condolences on behalf of the WIA and Amateur Radio operators in general have been extended to his wife Betty, his two sons and daughters and other members of the family. Don will certainly be missed by many.

Ian J Hunt VK5SQX
VK5 Division President

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Amateur Radio and the Future

I have long been concerned that simplifying access to the spectrum below 30 MHz could result in anarchy akin to that which is heard daily on the CB frequencies.

The RSGB recently asked for recognised established radio clubs to present their views on the future of Amateur Radio. The following is an abstract of the FOC (First Class CW Operators Club) position statement:

There are complex issues facing the Amateur Radio service which in essence comprise two major facets, namely:

1. The licensing requirements for access to Amateur Radio. This includes, inter-alia, the regulatory environment that might prevail following IARU deliberations at conferences over the next few years;

2. The way in which Amateur Radio actually operates in practice which is not necessarily governed by regulatory regimen nor by commercial practices.

It is proposed that:

** It is inappropriate and undesirable to continue the trend of continual lowering of standards for whatever reason but especially in pursuit of numbers, expressed either as members of the Society, or as quantity of licence holders;*

** Capability in Morse code is no longer a fair sole differentiator between those that have access to HF and those that do not. However, it is an excellent candidate amongst others for demonstration of capability, commitment and worthiness.*

** Whilst it may, in time, no longer be an international requirement, ability in the use of Morse code will continue to be a valid Amateur Radio skill;*

** The fact that CW is rapidly diminishing in the commercial world is irrelevant to its validity as a useful mode for Amateur Radio communications;*

** There is scope for a higher class of Amateur Radio licence than the current Amateur unrestricted;*

* There is no validity to the argument that the standard of entry requirement to the hobby is unattainably high.

Whilst there should be routes into the hobby that are easy, however these routes must be merely a beginning and those who aspire to full rights should be willing to work for them. The FOC wishes to see standards in Amateur Radio maintained and if possible enhanced.

I do hope officers of the WIA (and ACA) who are responsible for forward planning of the Radio Amateur licence will take heed of this position statement and consider its worthiness.

David A Pilley VK2AYD
Cairn Close, Wauchope NSW 2446

Re Just Testin' the Water - 2 m Mobile Operators

Like Sid VK2SW I have found 2 m mobile operation in Australia frustrating to say the least.

I first started this activity in 1951 and since then have made literally hundreds of interstate and country trips with little to no result. Indeed, without looking into log books I can virtually recite the contacts made on 2 m. I can recall only one contact from a VK3 location and that was from Mt Buffalo to Albury. In VK2 only one contact on 2 m and

that was in Forbes. I did have a number of contacts on 6 m mobile, and several on 70 cm portable as I took gear with me to Sydney whenever I flew there.

In three trips to Darwin I have made one contact in Alice Springs and one in Darwin. Two trips to Cairns for one contact. Two trips to Tasmania resulted in two contacts. That must mean something, but I know not what. Adelaide also yielded two contacts for about six visits.

Without wishing to upset Sid, I must mention that I was in Wagga Wagga for four days last year without making a contact.

Even when a mobile calls on a repeater, the response is nil, although there is more often than not activity amongst themselves. In short, I go along with Sid's idea.

I'll be in Wagga Wagga again later this year and perhaps we may even "test the water".

Ken Pincock VK3AFJ
17 Norvel Road
Ferntree Gully VIC 3156

Last Word on Return Loss?

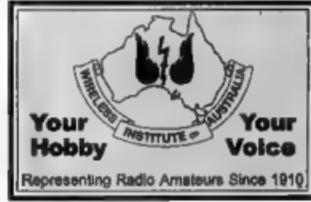
I am pleased with the response to my Technical Correspondence item about Return Loss (RL) published in the February 1998 issue of Amateur Radio magazine. I am pleased because it illustrates the usefulness

of an Amateur Radio segment devoted to technical discussion among readers.

I am not persuaded by correspondents' reasoning, some of which is flawed, to change or retract any part of my original "rash" statements. I believe that most readers, after consideration of the facts, will agree that Return Loss is only a "buzz word" which some prefer to use rather than the more generally useful and technically correct term "Reflection Coefficient".

To quote one of the Thomas Hardy rural characters, "My words though made as simple as I can, may be rather deep for some people".

Lindsay Lawless VK3ANJ
Box 760
Lakes Entrance VIC 3909



RADIO and Communications

incorporating AMATEUR RADIO ACTION AND CD ACTION

JOTA is coming in mid-October. Are you ready to help?

Gee whiz, you really have to wonder where it will end. The Aussie dollar may be about as popular as a pork chop in a synagogue, but this new Alinco radio is downright cheap.

And we mean cheap! The DX-77 is a well-qualified all-band HF transceiver which offers good performance for a silly, silly price. So should the Big Three be worried?

Better grab the Geiger Counter! October's R&C is really radio active this month. Here's just a sample...

- THE BATTLE CREEK SPECIAL: We give complete construction details for a top-performing HF antenna.
- REVIEW: ASAPS for Windows Vers 4. A very special piece of Aussie propagation prediction software.
- FUN WITH DTMF CHIPS: You will not believe what you can do with a simple \$3 chip. Seven innovative circuits.
- CONSTRUCTION: Build a 2M Halo antenna. Another old trooper! The best antenna for mobile 2M SSB...
- CONSTRUCTION: Build an audio sine wave generator. Another super design from Harold, VK3AFQ.
- As usual, we have our three DX columns and lots more... the best stories and regulars every month!

Don't miss out — **RADIO and COMMUNICATIONS** is great reading for amateurs!
Check your local newsagent today!

(PS. We also have the biggest collection of radio-oriented Classified ads in the country. There's lots of them because they work so well. Ask your newsagent to keep a copy for you each month, or ring 1800 25 2515 for subscription details. Hurry — you might miss something!)

WIA Divisions News

VK2 Notes

Councillors Visit Country Areas

As many of you are aware, this VK2 Council has made a point of Council Members visiting the Country Areas wherever possible.

During August, President Michael Corbin VK2YC spent a weekend in Albury where he represented the VK2 Council at the Field Day Dinner on the Saturday evening. On the Sunday he set up a stall at the Field Day with a selection of books from the Division Bookshop. He says sales were not as good as had been hoped but the opportunity to meet, and talk, with Amateurs from the area, quite apart from renewing many old acquaintances, was invaluable and a great pleasure.

Later in the month, Michael also attended the 30th Anniversary Celebrations for Wagga Amateur Radio Club which was, apparently, a huge success. So much so that, I believe, thoughts are already turning to a possible 40th Anniversary.

Other Members of Council have also been out and about with Vice President Brian VK2WBK representing Council at the Lismore Field Day (again with the Division Bookshop) and also the Regional Conference in Armidale. The author was the Council representative at the recent Southern Region Conference in Goulburn.

'That Tower' - Developments at Dural

President Michael and the author met with the Managing Director and Chief Engineer of Comsite (the new name for CSR) our tenants at Dural. The meeting, which took place at Dural, was the first meeting with CSR Management representatives since the infamous Court Case five years ago.

I am very pleased to report that the meeting, which continued over lunch, was very amicable with a number of decisions being mutually agreed. One major agreement is that Comsite will install a 70 cm antenna, of our choice, on their 200 ft tower.

The installation of antennas for the Division on the tower has always been part

of the formal agreement but, because of the problems earlier, has never been pursued. However, in this instance, they have not only agreed to install the antenna but, as a measure of their goodwill in the light of the spirit of co-operation now existing between Comsite and the WIA, have also offered to donate to the Division the heliax necessary for the installation. When the Comsite Engineer asked the question "how high?", Michael raised his eyes to heaven, and the Engineer laughingly replied "OK, I get the message!"

This is the first major step, it is hoped, towards bringing to fruition a series of links on 70 cm to north, south and west, envisaged by members of Council.

Membership Drive

Our readers are urged please to take every opportunity to encourage non-member friends to join the WIA. At the present time the VK2 Division has a New Member prize which will be drawn at the AGM in April.

Every new member joining the VK2 Division before 26 March 1999 will automatically go into the draw. The prize is an ICOM 706 Mark II (covering HF, 6 m and 2 m, valued at about \$2300) kindly donated jointly by Icom Australia and Amateur Transceiver Radio Centre of Gurraveen, NSW.

Where do they get a Membership Application form? Every Affiliated Club now has a supply of Information Kits which includes the necessary forms, etc. Alternatively, simply ring the office on 02 9689 2417, or, if you are in Country NSW, ring our Toll Free number 1800 817644 and we'll be only too pleased to post one out.

Finally, have YOU renewed your membership? If not please do so as a matter of urgency - the WIA needs the support of every Amateur, and of course it ensures you will continue to receive *Amateur Radio* every month!

'Hot off the Press'

I have just been informed by Richard VK2SKY, the VK2 Webmaster, that at long last the WIA Web Pages can be accessed using the URL <http://www.wia.org.au/thanks> to the assistance of Mark VK2XGK.

Divisional Web pages can now be accessed using http://www.wia.org.au/vk* (where * is the Divisional number). I know that Richard has been aiming for this for quite some time. Well done, and thanks, Richard and Mark. By the way, Richard is also in the process of re-organising the Federal and VK2 Web pages. Check the new Site Index Page www.wia.org.au/SiteIndex.html.

Eric Fossey VK2EZY
Division Secretary

VK5 and VK8 Notes

Divisional Council

The passing of Don Christiansen VK5ADC has been announced with an obituary in *Silent Keys* in this month's magazine. Don will be missed from Council as well as for his various other contributions to the hobby of Amateur Radio. We now expect to co-opt someone else to Council; however, this matter has not yet been finalised.

Learning from Past History

It is fact that as time passes information becomes forgotten. New people come into the ranks not aware of matters of major importance. Those who are aware often do not pass details along to newcomers.

I thus introduce the subject of antenna installations for Amateur Radio in South Australia. We should note that regulations seem to vary greatly from state to state.

Within VK5 the situation is quite clear. I will put it in the simplest form possible and then elaborate to provide further guidance. Please note that this applies specifically to the erection of Amateur Radio antennas.

It is permissible to put up any structure to a height of 10 metres without having to apply for ANY permission.

If you wish to erect a structure with a height in excess of 10 metres you are required to submit a Building Application. This is usually done through your local Town or City Council. In connection with the application you must provide drawings depicting the proposed installation and engineering calculations to show that the installation is structurally sound.

THERE IS NO REQUIREMENT FOR ANY PLANNING PERMISSION FOR AMATEUR RADIO ANTENNAS IN THE STATE OF SOUTH AUSTRALIA.

You do not have to notify neighbours nor place advertisements in newspapers, etc stating what you intend. This also means that neighbours cannot make objections to your installation on such grounds as the tower, mast or antenna being unsightly.

I comment here that we should do our best to make our antenna systems tidy in a general sense. I remember one Amateur Radio operator, upon whose behalf I interceded with a City Council, who had used bamboo canes as quad spreaders and had not bothered to cut off the curved ends of the spreaders. When I saw the installation I was somewhat aghast and could understand the concerns expressed regarding the appearance. It looked somewhat like an octopus gone wrong. The operator was co-operative and I was able to convince the Council that the

installation could be made acceptable in appearance.

You should provide plans which are clearly drawn and tidy. They should also be drawn to scale. You should show the supporting structure (mast or tower) as the main item. Details of guying and anchoring mechanisms should also be shown. Where you depict antennas I suggest that these be indicated as representative. Include a note (maybe even in small print) stating that the antenna as depicted is representative and subject to change from time to time.

If you have shown just one type of antenna without any additional comment you may find that your local council could later have good reason to object to what may be a larger antenna than originally indicated. I also suggest that the "antenna" need not necessarily be drawn to scale.

It could help if you included a photo-copy of the instruction booklet and assembly instructions for an antenna if you have such available. This would usually be the case with a commercially produced antenna and will give the local council engineer a better idea of what you intend.

To finalise these comments I provide a brief explanation of how it came about that the situation is so clear here in VK5.

Some years ago the late Bruce Bussen-schut (then VK5OR) had taken a great interest in the matter of erection of Amateur Radio antennas and relevant legislation. Bruce was a professional architect. He built up a comprehensive file on happenings in this area of interest (including obtaining details of many cases overseas) and helped quite a few operators in their approaches to City Councils.

Bruce's idea was to conceive a plan allowing us to take cases to higher courts to obtain favourable rulings regarding antenna installations. Eventually a case came to our notice that appeared to have suitable potential. In this instance the local government authority kept appealing against decisions in our favour. The matter, described by the judge as a "precedent" case, was settled in our favour in the Supreme Court before Mr Justice Wells and described as the "City of Noarlunga vs B Usher."

I will not try in these notes to detail the background of the case and the basis for decisions made by Mr Justice Wells. Suffice to say, if you run into any difficulties obtaining approval, you should refer to this decision as proving your right in law to be able to erect an antenna for Amateur Radio purposes.

I trust that this information will be useful to members of the VK5 Division and available as a reference for the future. It is difficult to provide such information on a

continuing basis. It may also be helpful for people in other states to be aware of the South Australian Supreme Court finding in the eventuality that it could carry some weight in other instances.

An article appeared in *Amateur Radio* magazine, February 1982 issue, entitled "Towers and the Law". That article provides more detail regarding the background of the case (whilst written by me the article was somehow attributed to John Ingham VK5KG who at that time was our Federal Videotape Co-ordinator).

October General Meeting

The October General Meeting of the Division to be held on Tuesday, 27 October will take the form of a display of members' Home Built Equipment and will include the annual competition for the Merv Millar Award for the best home-brew item displayed. I suggest that you get your best projects on the way and bring the resulting items along to that particular evening.

Burley Griffin Building (BGB)

At the time of compilation of these notes negotiations are in hand regarding our occupancy of the BGB. The outlook appears promising and a final result is expected soon. There should be more news regarding this in the next issue of *Amateur Radio*.

*Ian J Hunt VK5QX
Divisional President*

"QRN" News — VK7 Notes

Council Meeting

Our bi-monthly State Council meeting was held on Saturday, 12 September at Penguin with an excellent attendance. We encourage members outside the Council to come along and join in the discussions but with, of course, no voting rights. These members often see things slightly differently to the Council members and their input is really appreciated.

Our three branches take it in turns to host these meetings; in November it's the Southern branch's turn. Our ex-officio members responsible for various aspects of our organisation helped to make it a very fruitful meeting.

The meeting stood in silence as a mark of respect and in memory of three of our number who are no longer with us, life member Peter Frith VK7PF, Bob Jackson VK7NBF, and Lloyd Chappell VK7LC.

Finances

The finances are in a sound condition thanks to the attention of our Treasurer, John Klop

VK7KCC, and his predecessor Terry Ives VK7ZT. There are lots of things we could do for our members, however, if only we were allowed to print money.

FTAC Report

Tony Bedelph VK7AX

Approval has been given for two portable WICEN repeaters for the south of the State. Frequencies are 145.850 MHz (600 kHz offset) and 439.975 MHz with a 5 MHz offset.

The packet digipeater on Mt Barrow, previously VK7RTY, is now licensed under the common licence of VK7RAA, thus saving one fee.

The Southern branch has been given approval to change its beacon frequency from 52.37 to 50.297 MHz. Will all you chaps on the island up north who use our just brilliant beacons, please note this.

We are still cursed with a channel 5A television channel on the north-west coast and every time print comes on the TV screen out goes our packet digipeater. VERY frustrating but how do you get the ABA/ACA to do something about it? We can't.

Awards and QSL Report

John Bates

Only one Tassy Devil award was given out these past two months, but to Stan Seiffert W7AWA in Seattle for 160 metre CW/SSB contacts. Quite an achievement!

With propagation improvement, QSL cards are becoming numerous but we still have cost problems with small volume countries. We also still have problems with some of our amateurs who refuse to accept their cards or return one. This, we feel, does nothing for the state's image overseas.

Web Site

Co-ordinator Robert McKenzie VK7RB
Have you visited our Tassy site yet and signed our guest-book? If not, why not? It's definitely worth a look, and it's updated each week. We are pleased that the site wia.org.au is now in Federal hands and we hope all State sites will be linked to it soon.

Yes Tassy is alive and going well. We hope we can keep it that way!
Ron Churcher VK7RN

WIA Call Book 99

Every active radio amateur needs one for the shack and one for the car!

Adelaide-Auckland

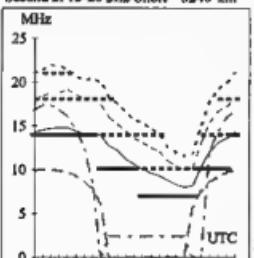
104

Second 2F13-20 2E2 Short 3240 km

Brisbane-Chicago

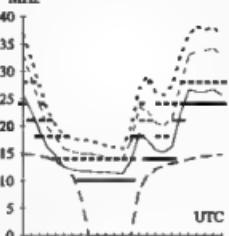
57

First F0-5 Short 14360 km

**Brisbane-Honolulu**

49

Second 3F5-11 3E0 Short 7569 km

**October 1998**

T index: 98

Legend

UD

F-MUF

E-MUF

GWF

ALE

J004-50%

50%-20%

20%-100%

Time scale

HF Predictions**Evan Jarman VK3ANI**

34 Alandale Court, Blackburn VIC 3130

These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. The frequencies, identified in the legend, are:

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F layer)
- Absorption Limiting Frequency

Also shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when useable. The predictions were made with the Ionospheric Prediction Service program ASAPS version 4. The path, propagation mode and Australian terminal bearing are also given for each circuit.

Adelaide-London

132

First F0-5 Long 23755 km

Brisbane-Moscow

321

First F0-5 Short 14071 km

Canberra-Dakar

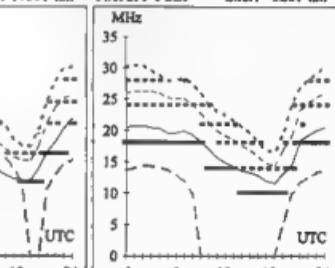
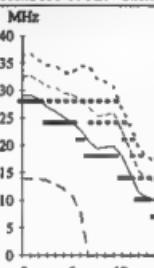
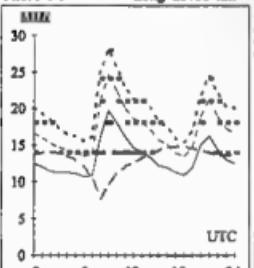
214

First F0-5 Short 17361 km

Darwin-Christchurch

139

First 2F5-8 2E0 Short 5281 km

**Adelaide-Tokyo**

312

First F0-5 Short 16269 km

Brisbane-Singapore

293

First F0-5 Short 6147 km

Canberra-New Delhi

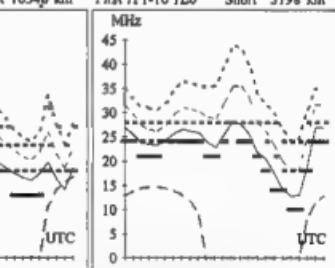
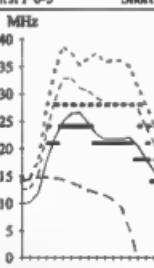
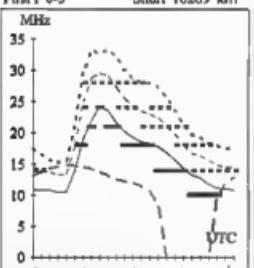
303

Second 4F5-11 4E0 Short 10348 km

Darwin-Manila

340

First 1F1-10 1E0 Short 3198 km

**Adelaide-Singapore**

1

Second 3F5-11 3E0 Short 7855 km

Canberra-Washington

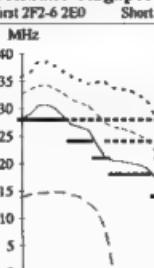
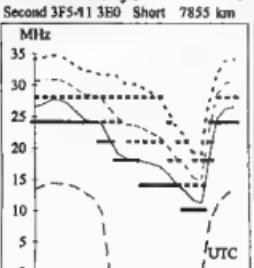
70

First F0-5 Short 15939 km

Darwin-Osaka

5

First 2F4-12 2E0 Short 5263 km



Hobart-Amman**283****Melbourne-Bangkok****312** **Perth-Harare****257****Sydney-Johannesburg****230**

First F 0-5

Short 14003 km

Second 3F6-13 3E0

Short 7372 km

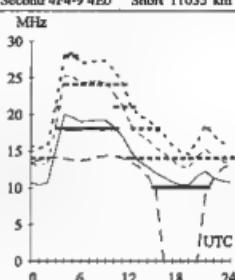
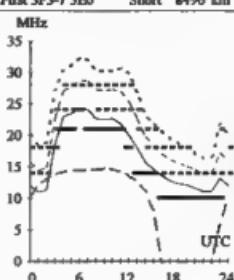
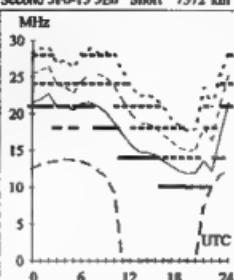
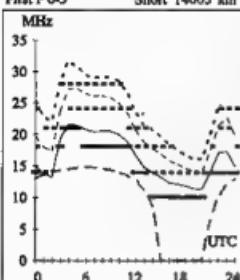
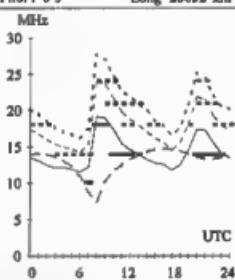
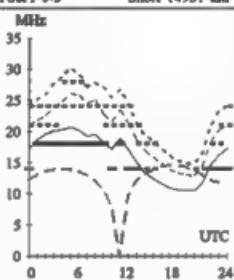
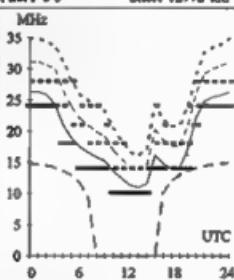
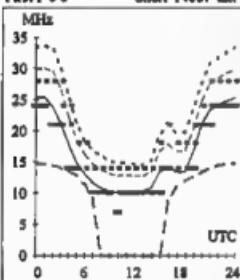
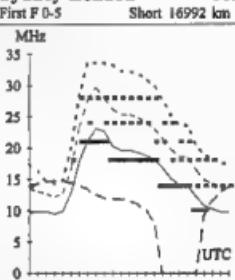
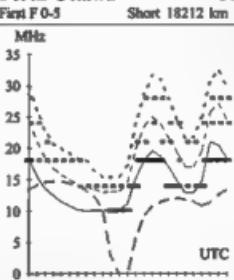
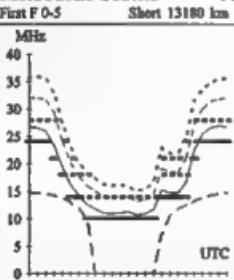
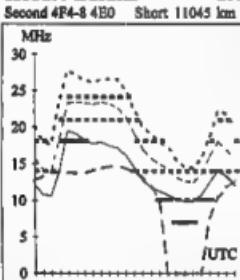
First 3F3-7 3E0

Short

8496 km

Second 4F4-9 4E0

Short 11035 km

**Hobart-Calgary****51****Melbourne-Los Angeles****65****Perth-Lima****162****Sydney-London****139****Hobart-Lusaka****239****Melbourne-Seattle****50****Perth-Ottawa****30****Sydney-London****319****Hobart-Rio de Janeiro****169****Melbourne-Stockholm****140****Perth-Tokyo****20****Sydney-Port Moresby****351**

First F 0-5

Short 12619 km

First F 0-5

Long 24424 km

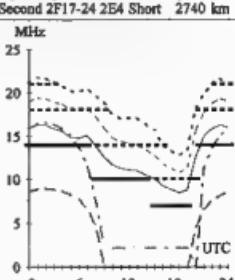
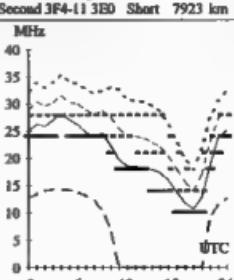
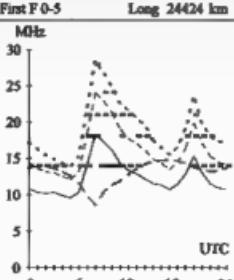
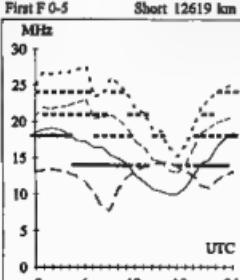
Second 3F4-11 3E0

Short

7923 km

Second 2F17-24 2E4

Short 2740 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio address flysheet*. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio address flysheet*.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194
Fax: 03 9584 8928
E-mail: vk3br@eo31.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/to R&W & US Imports, PO Box 431, Kuama NSW 2533 (no enquiries at office please ... 14 Boony Ave Kuama). Agencies at: Assoc TV Service, Hobart; Truscott Electronic World, Melbourne and Mildura. Alpha Tango Products, Perth Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.

- **WEATHER FAX** programs for IBM XT/ATs ***"RADFAZZ" \$35.00, is a high resolution shortwave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAZZ decoder. ***"SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, +137 MHz Receiver. ***"MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage ONLY from M Delahuntly, 42 Villiers St, New Farm QLD 4005 Ph 07 358 2785

- **HAM LOG v3.1** - Acclaimed internationally as the best IBM logging program. Review samples...AR. "Recommend it to anyone" The Canadian Amateur "Beyond that reviewer's ability to do justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant" Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Ganevius VK2VN, 02 369 2008 BH, fax 02 369 3069 Internet address rgh@ozemail.com.au

FOR SALE ACT

- **Hewlett Packard 5245L** 50 MHz counter with 5257A 0.05 - 18 GHz plug-in, \$345. **Hewlett RM-102** power/SWR meter and HN-31 1 kW dummy RF load, \$50 each. Ed VK1VP, QTHR, 02 6249 6348.

FOR SALE NSW

- **Hyundai HSS-100C** digital satellite receiver, 6 months old, as new, latest version, \$500. Ernest VK2BED, 02 9532 0175
- **Clearest Sale!** Kenwood TR-751 2 m tsxvr with SSB, \$550 ONO. Brother M1709 printer, takes paper to 16 inch width, \$50. GME PSU 35 amp peak, \$300. Kyocote 144 10SXRII 2 m tsxvr, dent on case, excellent working order, \$200. 25 ft tower, galvanised with 10 ft extension tube, \$100 ONO. Charlie VK2NAJ, QTHR, 02 9604 7454.

- **Telescopic tower,** 6 m - 10 m 200 mm triangular section, winch and cable, base hinge, bracket, \$300. R B Mackie VK2EJU, 02 6553 1365.

- **Yates FT1** with PSU, Mokey key, SWR bridge, mobile antennas, mic, manual, excellent order, \$350 the lot. David VK2BDT, Goulburn, 02 4821 5036.
- **Icom IC-2GAT**, mint condn, boxed, all accessories, carry case, \$435 ONO. **Icom IC-275A** base station, s/n 001716, AC/DC operation, excellent condn, boxed, all accessories, never used. **Icom IC-475A** base station, s/n 01045, AC/DC operation, excellent condn, boxed, all accessories, never used. Sell both together for \$2500, or separate for \$1400 each ONO. Stephen VK2SPS, 02 4334 7743.

- **3 element monoband antenna** with gamma match for 18 and 21 MHz, use for either band, excellent condn, \$145 plus postage. J R Thurstan VK2KV, 02 4787 7003.

- **Satellite dish offset** 90 cm complete with LNA (new) feed horn and double polarity polariser, KU band. Med DT400 digital receiver, new, box and

instructions, ready for immediate use, \$630 the lot, will split. Peter VK2BPO, QTHR, 02 9713 1831

- **Singer FM10CS test set**, complete with AM and FM plug-in modules, operator's manual, maintenance manual, \$600. **Trio CD-1303D oscilloscope**, s/n 454463, \$200. **Akai reel-to-reel tape recorder**, s/n 02339, \$50. **YAESU FT-101 SSB tsxvr**, s/n 16466, \$200. **Star SR-550 ham band rxevr**, s/n 71658, \$50. **UHF filters**, 400 - 490 MHz, tuned line, solid brass gold plated, used for making diplexers, etc, \$20 each. **Crystal calibrator No 18**, \$20. **AVO VTVM**, \$20. Ray VK2FW, 02 6365 3419 (mornings).

FOR SALE VIC

- **Icom IC-25A** 2 m tsxvr, s/n 21614. **Icom IC-R70** tsxvr, 100 kHz to 30 MHz, s/n 18058492. Working instructions and circuit diagrams supplied for both units, some options included, further information from K P Richards VK3CKK, 03 9729 1624.
- **Fluke 8810A** digital multimeter, batt or AC, \$80. **Command BC-452B** tsxvr, 3-6 MHz, with dynamotor, no mods, \$130. **Command BC-496A** control box for 2 tsxvrs, new, \$80. **Command PT-234A** rack for one tx, new, \$40. Will trade some or all for military or avionics equipment. Peter VK3IZ, 03 5156 2035, jupiter@mer-iach.com.au.
- **Nally tower**, heavy duty, on the ground and ready to remove, equipped with 3 to 1 reduction winch for tilt-over, 2 to 1 reduction for vertical raise, near-new heavy duty wire cables, \$300. Jack VK3SP, QTHR, 03 9842 1841.

FOR SALE QLD

- **Kenwood TS-520, DG5** remote VFO, connecting cables, good condn, spare set final and driver tubes, will not separate, \$600. M T Deakin VK4DV, QTHR, 07 4933 2646 (evenings).
- **Butternut HFSB** Butterly Beam, 20, 17, 15, 12 and 10 metres, \$200. B & W dipole, 78' long, 80, 40, 20 metres, \$100. Kenwood internal automatic ATU for TS-690A/TS-450S, \$200. **Kantronics KPC-3, \$80** Encyclopaedia Britannica on CD, 1999, \$100. **Dick VK4DIC**, 07 3264 1655
- **Kenwood TS-690S, HF + 6 m, ATU, PSU**, MC-60 mic, original handheld mic, manual, box, good condn, \$1800. Licensed amateur only. S Bertolone VK4II, 07 3343 1961
- **Icom IC-740** HF tsxvr, in excellent operating order and appearance, with two VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, good reports on transmissions on all bands, sensitive receiver, copy of spec sheet available, \$590. 0-250 V/1.8 A variable auto-transformer, unused, very useful for workshop and experimental use, \$35. VK4SZ, QTHR, 07 4061 3286, johnb@commburn.com.au
- **Rohde & Schwarz signal generator SMS**, 0.1 - 500 MHz, precision instrument, programmable with digital readouts for RF freq, Mod, % or deviation and RF output level, manual included, \$745. **AWA RT-85**, 2 m FM mobile, remote head, 25/5 watts, programmed with 64 channels of popular repeater, packet and simplex frequencies, auxiliary packet connector, frequency chart, technical information

\$95. Eric VK4NEF, QTHR, 07 3353 1695 or est@pawop.com.au.

● **Racal Dana 9008M modulation meter, AM/FM, 8 ranges, AF filters, 240 V AC, GC, \$120.** Gary VK4AR, 07 3353 1695.

FOR SALE SA

● **Uniden HR-2510 10 m tx/cvr, s/n 05000194, VGC, \$280.** Digitor 2 m 30 W amplifier with receive pre-amp, as new, \$80. Both items in original boxes. Mark VK5KMK, QTHR, 08 8836 7279.

● **Deceased estate. Icom IC-751 HF tx/cvr, s/n 05139, \$700.** Icom PS-30 PSU, s/n 02955, \$170. **Tony II 5000E modem, s/n S31918a, \$100.** Kenwood SM-220 monitor, s/n 4040195, \$150. **Hell BM-10 headset/mic, \$95.** Contact Jim VK5NB, 08 8294 2992, jmac@cobweb.com.au

● **Icom IC-720A HF tx/cvr, s/n 03137, \$600.** IC-PS-30 PSU, s/n 02955, \$170. **Yaesu FT-101B HF tx/cvr, s/n 010345, new tubes fitted, \$250.** Two only \$650 each. **Two only 6BL6, new, \$40 each.** Jim McLachlan, 08 8294 2992, jmac@cobweb.com.au

● **Icom IC-505 6 m SSB FM tx/cvr, \$295.** **Hy-Gain Hytower, 160-10 m vertical tower, no traps, \$80.** Kenwood AT-230 ATU, as new, \$200. Gary, 08 8396 6706 (AH), 0419 815 479 (BH).

● **Kenwood TS-50, excellent condn, with extras, \$1400.** **Kenwood TS-130S HF tx/cvr, AT-130 ATU, external TS-120 VFO, MC-50 deck mic, mobile bracket, service manual, all other manuals, excellent condn, \$830.** Lots more radio equipment for sale. Paul VK5MAP, QTHR, phone/fax 08 8651 2398.

FOR SALE TAS

● **Yaeu FL-2100 linear amplifier, 1200 W PEP, grounded grid, 80 - 10 m, pair 572B tubes, auto level control, 41 lbs, 240 V A, \$600.** D Baldwin VK7DA, QTHR, 03 6229 6538.

● **85 ft approved tilt over mast with three element full size 20 m beam, magnificent radio location just 30 miles north from Launceston, plus 20 sq superior home on 30 acres with airstrip and hangar, outbuildings including shearing shed, etc, \$270,000.** Erik VK7AAB, 03 6383 1675

● **Kenwood TL-922 linear amplifier, \$2000 ONO.** **Tune 5000 communications terminal, CW, RTTY, AMTOR, \$550 ONO.** Richard VK7RO, 03 6227 8974.

WANTED ACT

● **Dual directional couplers, 1 GHz and up.** **Drake R7 receiver manual/circuit.** Ed VK1VP, QTHR, 02 6249 6348.

● **Wanted urgently Yaeu FT-747 workshop manual,** will pay all costs. Tex VK1ITX, 02 6296 2508, tkitx@bigpond.com

WANTED NSW

● **Heavy, old, unloved receivers (parts or junkers),** for listener and budding restorer, no one has given me a hernia yet (come close), will pay dollars if you want. Also will be at Wyong Field Day, Sunday 28 February, with an empty trailer! Will also be at the Castle Hill military radio display stand, with comms receivers display. John L21068, 02 9533 6261.

● **Carphone, converted for 6 m, remote head, xtal type RT80, FM288, FM92,** etc. Richard VK2XRC, 02 9665 9680.

● **Yaeu FT-102 mains power transformer, or junked FT-102.** Yaeu FT-707 digital readout board, or junked FT-707. Errol VK2BET, QTHR, 02 9476 2933, 015 952 930.

WANTED QLD

● **10 and 15 m lightweight beam, rotator to suit.** Unused 6146 valves. Len VK4JZ, QTHR, 07 5485 3324.

VK3BBS welcomes more links from DX Clusters, especially any in VK, as there is no Australian DX Cluster Network. If you wish to link to the VK3BBS DX cluster, contact Peter at VK3AVE@VK3BBS.#MEL.VIC.AUS.OC.

The next meeting of the Group will be at 1930 hrs on Monday, 12 October at the Moorabbin and District Radio Club rooms, Turner Road, Highett in Victoria (Melways 77 J9). All are welcome. Enquiries should be addressed to MPRGi, PO Box 299, St Albans, VIC 3021 or via packet to MPRGCM@VK3BBS.#MEL.VIC.AUS.OC. Peter McEwen VK3FEE

Club News

Melbourne Packet Radio Group Inc

This month we present details of three Melbourne based DX Clusters. The Cluster network consists of three CLX Linux DX Clusters running CLX version 4, as follows:

1. **VK3BBS-4 DX Cluster;** sysop Peter VK3AVE; run by the Melbourne Packet Radio Group Inc; Netrom Alias BBSDXC; callsign VK3BBS-4; frequencies 146.600 MHz via VK3RPS-2, 434.050 MHz via VK3RPS-7, 147.575 MHz via VK3RMU-2, 144.750 MHz direct, and 147.550 MHz direct.

2. **VK3FRS-4 DX Cluster;** sysop Roger VK3FRS; Netrom Alias FRSDXC; callsign VK3FRS-4; frequencies 144.775 MHz direct, and 434.250 MHz direct.

3. **VK3JN-4 DX Cluster;** sysop Matt VK3JN; Netrom Alias JNUDXC; callsign VK3JN-4; frequency 144.975 MHz direct.

The clusters are linked to the international DX network via the following locations:

1. VK4CJO DX Cluster in Brisbane;
2. AC4ET DX Cluster in USA;
3. WU3V DX Cluster in USA;
4. VE7CDQ DX Cluster in Canada;
5. PA3GOJ DX Cluster in The Netherlands;
6. PP5BLU DX Cluster in Brazil;
7. IRSWPJ DX Cluster in Italy;
8. JE3YEK DX Cluster in Japan; and
9. K4UGA DX Cluster in USA.

WANTED VIC

● **QEX magazine,** all issues from March 1982 to December 1987, January to September 1988, all 1993, August to December 1995, will buy complete sets if necessary. Richard VK3ZCL, 03 9571 4065, rjppp@netpac.net.au

● **Avionic control boxes and Tx/Rx for ARC-4.** Control box for 51-X1 Rx, 51-Y3 ADF, ARC-60 and any other associated equipment or manuals. Peter VK3IZ, 03 5156 2053, jupiter@net-tech.com.au

● **Elico portable transceiver type 6104 circuit and service manual,** will pay copy and postage charges. J D Patterson VK3ATQ, QTHR, 03 5944 4511.

WANTED SA

● **Yaeu FT-1000 or Icom IC-765 or Kenwood TS-950 HF tx/cvr. FAS-4 remote antenna switch.** Gary, 08 8396 6706 (AH), 0419 815 479 (BH).

MISCELLANEOUS

● **The WIA QSL Collection (now Federal) requires QSLs.** All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunshine Hill Road, Monrose VIC 3765, tel 03 9728 5350.

● **If you got your licence before 1973 you are invited to join the Radio Amateurs Old Timers Club.** A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blewings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet amsat.org , and on the VK1 Home Page http://www.vk1.amsat.org	(F) \$72.00 (G) (\$8) \$88.00 (X) \$44.00
VK2 NSW Division 109 Wigmore St Parramatta NSW (PO Box 1068 Parramatta 2124) Phone 02 9669 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Michael Corbin Secretary Eric Fossey Treasurer Barry Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.170, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 127.350 (* morning only) with relays to some of 18.120, 21.170, 581.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.583 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup amsat.org , and on packet radio.	(F) \$69.00 (G) (\$8) \$86.00 (X) \$41.00
VK3 Victorian Division 404 Victory Boulevard Ashburton VIC 3147 Phone 03 9868 9261 Fax 03 9868 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@vix.net.au	VK3IPC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM/R's VK3RML 146.700, VK3RMW 147.250, VK3RWR 147.225, and 70 cm FM/R's VK3ROU 438.225, and VK3RMU 438.075. Major news under cell VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (\$8) \$81.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 6377	President Colin Gladstone Secretary Peter Harding Treasurer Alastair Erick e-mail: secretary@wiaq.powerup.com.au Web: http://www.wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL	1.825 MHz SSB, 3.605 MHz SSB, 7.116 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only); and regional VHFIHF'ed repeated at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (\$8) \$86.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8382 3428 Fax 08 8264 0483	President Ian Hunt Assistant Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.amsat.org/	VK5QX VK5EU VK5UJ	1627 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Milford, 146.825 FM Beresford Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (INT) 3.655 SSB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.875 MHz FM Adelaide, 1930 hrs Monday. 146.700 FM(R), 438.525 FM(R), 29.120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1.825, 3.580, 3.582 (Busselton), 7.075, 14.116 (North), 14.175 (East), 21.185, 50.150, (X) 34.00 (morning and evening) 146.900(R) Mt William (Bunbury), 147.000(R) Katanning, 147.200(R) Cataby, 147.250(R) Mt Saddleback (Boddington), and 147.350(R) Busselton; (evening only) 1.865, 3.564 MHz, 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.580 at 1930 hrs.	(F) \$75.00 (G) (\$8) \$81.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	Acting President Cliff Baslin Secretary Christine Baslin Treasurer Bruce Headland-Thomas Web: http://www.faroc.com.au/vk6wia/ e-mail: vk6wia@faroc.com.au	VK6LZ VK6LZL VK6BOO	146.700 FM(R), 438.525 FM(R), 29.120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1.825, 3.580, 3.582 (G) (\$8) \$80.00 (Busselton), 7.075, 14.116 (North), 14.175 (East), 21.185, 50.150, (X) 34.00 (morning and evening) 146.900(R) Mt William (Bunbury), 147.000(R) Katanning, 147.200(R) Cataby, 147.250(R) Mt Saddleback (Boddington), and 147.350(R) Busselton; (evening only) 1.865, 3.564 MHz, 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.580 at 1930 hrs.	(F) \$62.00
VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305	President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net e-mail: vk7pg@hamnet.hinet.com.au	VK7RN VK7KPG VK7KCC	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.580 at 1930 hrs.	(F) \$74.00 (G) (\$8) \$80.00 (X) \$44.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times.
Note: All times are local. All frequencies MHz.				

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